HCD-C50/C50U

SERVICE MANUAL

US Model
HCD-C50U
Canadian Model
AEP Model
UK Model
E Model
Australian Model
PX Model
HCD-C50

Photo : HCD-C50 (AEP model)

HCD-C50/C50U are the CD player and stereo deck receiver in FH-C5X and MHC-C50.

Dolby noise reduction manufactured under license from Dolby Laboratories Licensing Corporation. "DOLBY" and the double-D symbol ▯▯ are trademarks of Dolby Laboratories Licensing Corporation.

CD SECTION	Model Name Using Similar Mechanism		CDP-H3750
	CD Mechanism Type		CDM23-5BD3
	Base Unit Type		BU-5BD3
TAPE DECK SECTION (C50)	Model Name Using Similar Mechanism		HCD-H61/H61M
	Tape Transport Mechanism Type	DECK-A	TCM-190RA12A
		DECK-B	TCM-190RB22A
TAPE DECK SECTION (C50U)	Model Name Using Similar Mechanism		HCD-H51/H51M
	Tape Transport Mechanism Type		TCM-210W3

SPECIFICATIONS

Tuner/Amplifier/CD player/Cassette deck (HCD-C50)

Tuner Section

System		FM stereo, AM superheterodyne tuner
FM tuner section		
Tuning range		
	EE model :	65 — 74 MHz 87.5 — 108 MHz
	Except EE model :	87.5 — 108 MHz
Antenna terminals		75 ohms unbalanced
Intermediate frequency		10.7 MHz
AM tuner section		
Tuning range		
	G model :	AM: 531 — 1,602 kHz
	IT model :	AM: 522 — 1,611 kHz
	AEP, UK, EE model :	MW: 531 — 1,602 kHz LW: 153 — 279 kHz
	US, CND model :	531 — 1,710 kHz (at 9kHz step) 530 — 1,710 kHz (at 10kHz step)
	E, EA, AUS, SP, PX model :	MW 531 — 1,602 kHz (at 9 kHz step) MW 530 — 1,710kHz (at 10kHz step) SW 5.95 — 17.9MHz
Antenna		AM loop antenna, External antenna terminals
Intermediate frequency		450 kHz

— Continued on next page —

COMPACT DISC DECK RECEIVER

SONY®

MICROFILM

Amplifier Section

AEP, UK, EE, G, IT model :
Continuous RMS power output

	30 + 30 watts (6 ohms at 1 kHz, DIN) 36 + 36 watts (6 ohms at 1 kHz, 5% THD)
Music power output	40 + 40 watts (6 ohms at 1 kHz, 10% THD)
Inputs	MIX MIC (minijack): sensitivity 1 mV, impedance 10 kilohms PHONO IN (phono jacks): sensitivity 5 mV, impedance 47 kilohms MD IN (phono jacks): sensitivity 250 mV, impedance 47 kilohms
Outputs	HEADPHONES (stereo minijack): accepts headphones of 8 ohms or more SPEAKER: accepts speakers of 6 to 16 ohms MD OUT (phono jacks): voltage 250 mV, impedance 2 kilohms

US, CND model :
Continuous RMS power output

	25 + 25 watts (6 ohms at 80 Hz — 20 kHz, 1% THD)
Inputs	VIDEO IN (phono jacks): sensitivity 250 mV, impedance 47 kilohms MD IN (phono jacks): sensitivity 250 mV, impedance 47 kilohms
Outputs	HEADPHONES (stereo minijack): accepts headphones of 8 ohms or more SPEAKER: accepts speakers of 6 to 16 ohms VIDEO OUT (phono jacks): voltage 250 mV, impedance 1 kilohm MD OUT (phono jacks): voltage 250 mV, impedance 1 kilohm

E, EA, AUS, SP, PX model :
Continuous RMS power output :
36 + 36 watta (6 ohms at 1kHz, 5% THD)
Peak music power output : 300 watts

Inputs	MIX MIC (minijack): sensitivity 1 mV, impedance 10 kilohms MD/VIDEO IN (phono jacks): sensitivity 250 mV, impedance 47 kilohms
Outputs	HEADPHONES (stereo minijack): accepts headphones of 8 ohms or more SPEAKER: accepts speakers of 6 to 16 ohms MD/VIDEO OUT: voltage 250 mV, impedance 2 kilohms

Cassette Deck Section

Recording system	4-track 2-channel stereo
Frequency response (DOLBY NR OFF)	40 — 13,000 Hz (±3 dB), using TYPE I cassette (Sony HF-S) 40 — 14,000 Hz (±3 dB), using TYPE II cassette (Sony UX-S)
Wow and flutter	0.1% WRMS ±0.3% (DIN)

CD player Section

System	Compact disc digital audio system
Laser	Semiconductor laser
Wavelength	780 — 790 nm

General

Desitination	Power requirements	Power consumption
AEP, EE, G, IT model	220 — 230 V AC, 50/60Hz	100W
UK model	240 V AC, 50Hz	100W
AUS model		
E, EA, SP, PX model	110 —120/ 220 —240 V AC, adjustable, 50/60Hz	100W
US model	120V AC, 60Hz	80W
CND model		90W

Dimensions	Approx. 225 x 330 x 320 mm (8⅞ x 13 x 12⅝ in.) (w/h/d) incl. projecting parts and controls
Weight	Except SP model : Approx. 8.9 kg SP model : Approx. 9.1 kg
Supplied accessories	Remote Commander (1) Sony SUM-3 (NS) batteries (2) AM loop antenna (1) FM antenna (1) Speaker cord (2) (Except AEP, UK, EE, G, IT model)

Note

EE : East European model
EA : Saudi Arabia model
G : German model
IT : Italian model
SP : Singapore model
CND : Canadian model
AUS : Australian model

SAFETY-RELATED COMPONENT WARNING!!

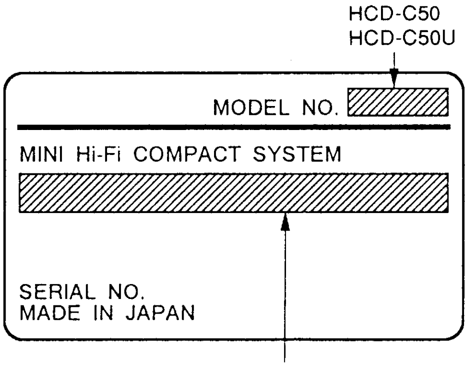
COMPONENTS IDENTIFIED BY MARK ⚠ OR DOTTED LINE WITH MARK ⚠ ON THE SCHEMATIC DIAGRAMS AND IN THE PARTS LIST ARE CRITICAL TO SAFE OPERATION. REPLACE THESE COMPONENTS WITH SONY PARTS WHOSE PART NUMBERS APPEAR AS SHOWN IN THIS MANUAL OR IN SUPPLEMENTS PUBLISHED BY SONY.

ATTENTION AU COMPOSANT AYANT RAPPORT À LA SÉCURITÉ!

LES COMPOSANTS IDENTIFIÉS PAR UNE MARQUE ⚠ SUR LES DIAGRAMMES SCHÉMATIQUES ET LA LISTE DES PIÈCES SONT CRITIQUES POUR LA SÉCURITÉ DE FONCTIONNEMENT. NE REMPLACER CES COMPOSANTS QUE PAR DES PIÈCES SONY DONT LES NUMÉROS SONT DONNÉS DANS CE MANUEL OU DANS LES SUPPLÉMENTS PUBLIÉS PAR SONY.

MODEL IDENTIFICATION

— SPECIFICATION LABEL —



AEP, East European, German,
Italian model : AC 220 — 230V ~, 50/60Hz, 100W
UK model : AC 240V, 50Hz, 100W

E, Saudi Arabia, Singapore
PX model : AC 110 — 120, 220 — 240V, 50/60Hz, 100W
Australian model : AC 240V, 50Hz, 100W
US model : 120V, 60Hz, 80W
Canadian model : 120V, 60Hz, 90W

CLASS 1 LASER PRODUCT
LUOKAN 1 LASERLAITE
KLASS 1 LASERAPPARAT

This appliance is classified as a CLASS 1 LASER product. The CLASS 1 LASER PRODUCT MARKING is located on the rear exterior.

The following caution label is located inside the unit.

CAUTION ; INVISIBLE LASER RADIATION WHEN OPEN. AVOID EXPOSURE TO BEAM.
ADVARSEL ; USYNLIG LASERSTRÅLING VED ÅBNING NÅR SIKKERHEDSAFBRYDERE ER UDE AF FUNKTION. UNDGÅ UDS ÆTTELSE FOR STRÅLING.
VARO! ; AVATTAESSA JA SUOJALUKITUS OHITETTAESSA OLET ALTTIINA LASERSATEILYLLE.
VARNING ; LASERSTRÅLING NÄR DENNA DEL ÄR OPPNÅD OCH SPÄRREN ÄR URKOPPLAD.
ADVARSEL ; USYNLIG LASERSTRÅLING NÅR DEKSEL ÅPNES UNNGÅ EKSPONERING FOR STRÅLEN

SAFETY CHECK-OUT

After correcting the original service problem, perform the following safety checks before releasing the set to the customer:

Check the antenna terminals, metal trim, "metallized" knobs, screws, and all other exposed metal parts for AC leakage. Check leakage as described below.

LEAKAGE TEST

The AC leakage from any exposed metal part to earth ground and from all exposed metal parts to any exposed metal part having a return to chassis, must not exceed 0.5 mA (500 microampers). Leakage current can be measured by any one of three methods.

1. A commercial leakage tester, such as the Simpson 229 or RCA WT-540A. Follow the manufacturers' instructions to use these instruments.
2. A battery-operated AC milliammeter. The Data Precision 245 digital multimeter is suitable for this job.
3. Measuring the voltage drop across a resistor by means of a VOM or battery-operated AC voltmeter. The "limit" indication is 0.75 V, so analog meters must have an accurate low-voltage scale. The Simpson 250 and Sanwa SH-63Trd are examples of a passive VOM that is suitable. Nearly all battery operated digital multimeters that have a 2V AC range are suitable. (See Fig. A)

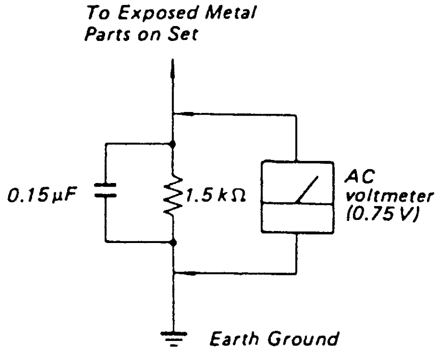


Fig. A. Using an AC voltmeter to check AC leakage.

TABLE OF CONTENTS

Section Title Page

SECTION 1. SERVICE NOTE 5

SECTION 2. GENERAL

Parts Identification 9

SECTION 3. DISASSEMBLY

3-1. Case Removal 11
3-2. Back Panel Removal 11
3-3. Main Board Removal 12
3-4. Power Supply Unit Removal 12
3-5. TC Mechanism Deck Removal 13
3-6. CD Mechanism Deck Removal 13

SECTION 4. MECHANICAL ADJUSTMENTS 14

SECTION 5. ELECTRICAL ADJUSTMENTS

Deck Section 14
CD Section 18
Tuner Section 20

SECTION 6. IC PIN FUNCTIONS

- IC202 Deck Controller (M50964-260FP) 22
- IC361 Mechanism Controller (M3747M4-220SP) 24
- IC450 CD Mechanism Controller (µPD75516GF-461-3B9) 25
- IC501 Display Controller (µPD78042-GF-033-3B9) 28
- IC601 CD Master Controller (µPD75517GF-209-3B9) 30

SECTION 7. DIAGRAMS

7-1. Circuit Boards Location 32
7-2. Block Diagram — Main Section — 33
7-3. Block Diagram — CD/Display Section — 36
7-4. Block Diagram — Deck (HCD-C50) Section — 39
7-5. Block Diagram — Deck (HCD-C50U) Section — 41
7-6. Printed Wiring Board
• Main Section (HCD-C50 : AEP, UK, G, IT, EE) 43
7-7. Schematic Diagram
• Main Section (HCD-C50 : AEP, UK, G, IT, EE) 47
7-8. Schematic Diagram
• Main Section
(HCD-C50 : CND, E, EA, AUS, SP, PX/C50U) 52
7-9. Printed Wiring Board
• Main Section
(HCD-C50 : CND, E, EA, AUS, SP, PX/C50U) 57
7-10. Printed Wiring Board
• CD Section 61
7-11. Schematic Diagram
• CD Section 65
7-12. Schematic Diagram
• Display Section 70
7-13. Printed Wiring Board
• Display Section 75
7-14. Printed Wiring Board
• Deck Section (HCD-C50) 80
7-15. Schematic Diagram
• Deck Section (HCD-C50) 85
7-16. Schematic Diagram
• Deck Section (HCD-C50U) 89
7-17. Printed Wiring Board
• Deck Section (HCD-C50U) 93
7-18. Semiconductor Lead Layouts 97

SECTION 8. EXPLODED VIEWS

8-1. Case, Power Board Section 99
8-2. Front Panel, PC Board Section 100
8-3. Cassette Holder Section 101
8-4. Mechanism Deck Section 1 (HCD-C50)
(Deck A : TCM-190RA12A/ DECK B : TCM-190RB22A) 102
8-5. Mechanism Deck Section 2 (HCD-C50)
(Deck A : TCM-190RA12A/ DECK B : TCM-190RB22A) 103
8-6. Mechanism Deck Section 3 (HCD-C50U) (TCM-210W3) 104
8-7. Mechanism Deck Section 4 (HCD-C50U) (TCM-210W3) 105
8-8. CD Mechanism Section 1 (CDM23B-5BD3) 106
8-9. CD Mechanism Section 2 (CDM23B-5BD3) 107
8-10. Optical Pick-up Section (BU-5BD3) 108

SECTION 9. ELECTRICAL PARTS LIST 109

SECTION 1
SERVICING NOTE

NOTES ON HANDLING THE OPTICAL PICK-UP BLOCK OR BASE UNIT

The laser diode in the optical pick-up block may suffer electrostatic breakdown because of the potential difference generated by the charged electrostatic load, etc. on clothing and the human body.

During repair, pay attention to electrostatic breakdown and also use the procedure in the printed matter which is included in the repair parts.

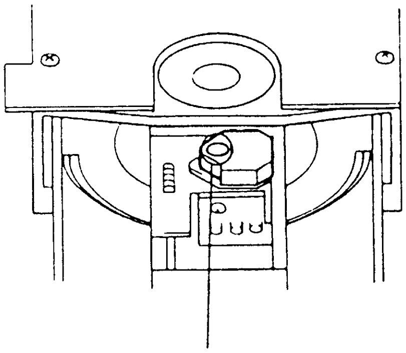
The flexible board is easily damaged and should be handled with care.

NOTES ON LASER DIODE EMISSION CHECK

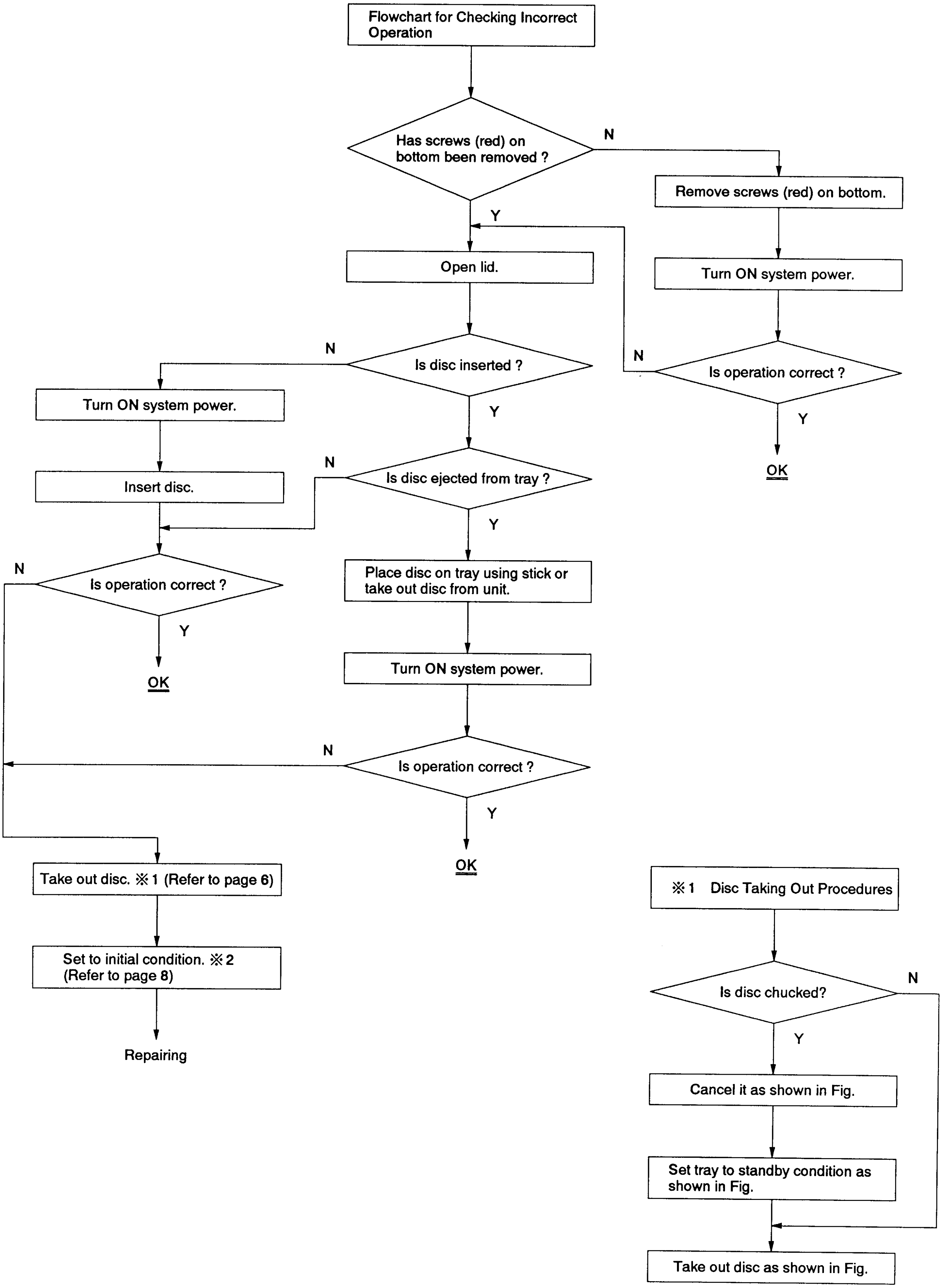
The laser beam on this model is concentrated so as to be focused on the disc reflective surface by the objective lens in the optical pick-up block. Therefore, when checking the laser diode emission, observe more than 30 cm away from the objective lens.

LASER DIODE AND FOCUS SEARCH OPERATION CHECK

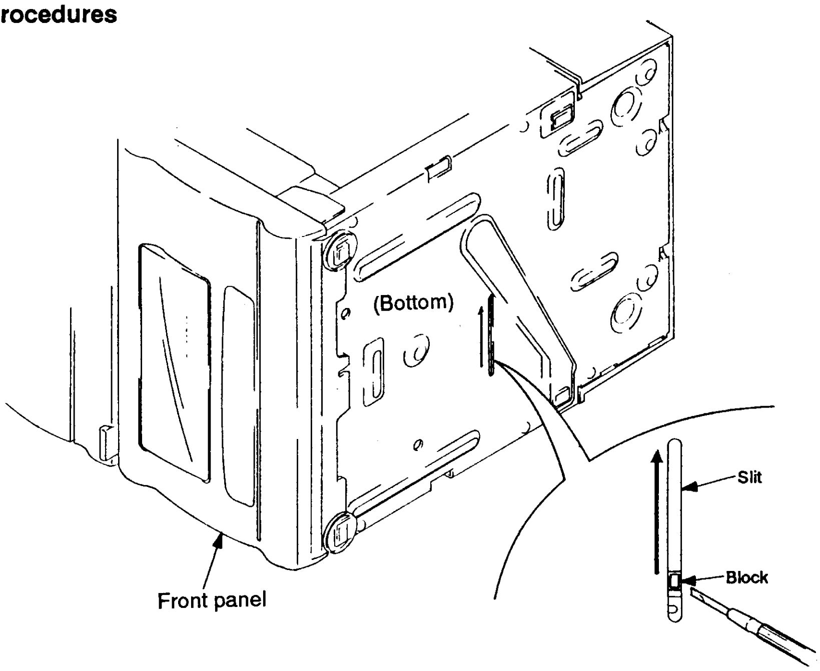
1. Make POWER switch on with no disc inserted and disc table closed.
2. Confirm that the following operation is performed while observing the objective lens.



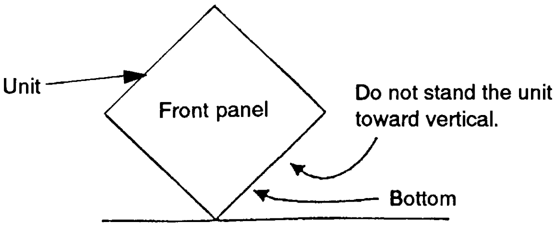
❶ Confirm that laser beam is spread.
❷ Up and downmotion of the objective lens. (3 times)


Flowchart for Checking Incorrect Operation
Has screws (red) on bottom been removed ?
N
Remove screws (red) on bottom.
Turn ON system power.
Is operation correct ?
N
Y
OK
Y
Open lid.
Is disc inserted ?
N
Turn ON system power.
Insert disc.
Y
Is disc ejected from tray ?
N
Y
Place disc on tray using stick or take out disc from unit.
Turn ON system power.
Is operation correct ?
N
Y
OK
Is operation correct ?
N
Y
OK
Take out disc. ※1 (Refer to page 6)
Set to initial condition. ※2 (Refer to page 8)
Repairing
※1 Disc Taking Out Procedures
Is disc chucked?
N
Y
Cancel it as shown in Fig.
Set tray to standby condition as shown in Fig.
Take out disc as shown in Fig.

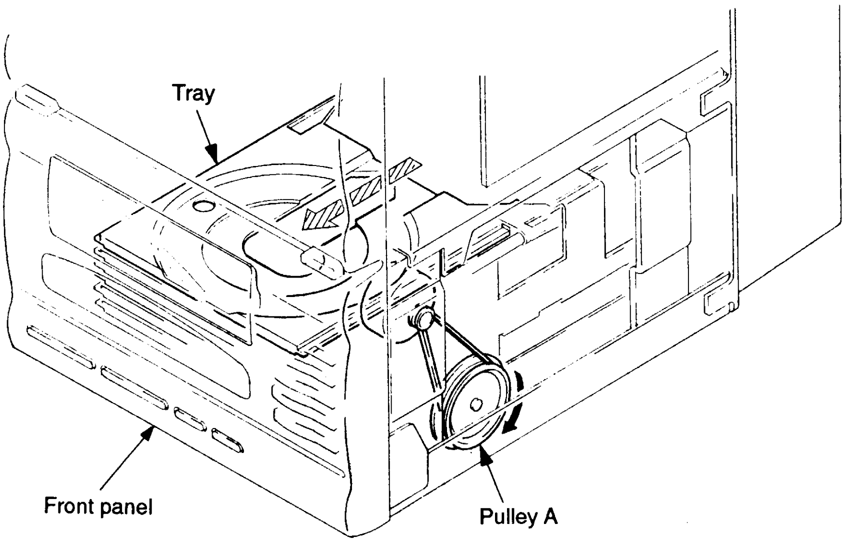
Disc Taking Out Procedures


(Bottom)
Front panel
Slit
Block

1) Insert a thin stick into the hollow of the white block and move it in the arrow direction.
(When a disc is chucked, handle the unit as follows to avoid disc removal.)


Unit
Front panel
Do not stand the unit toward vertical.
Bottom

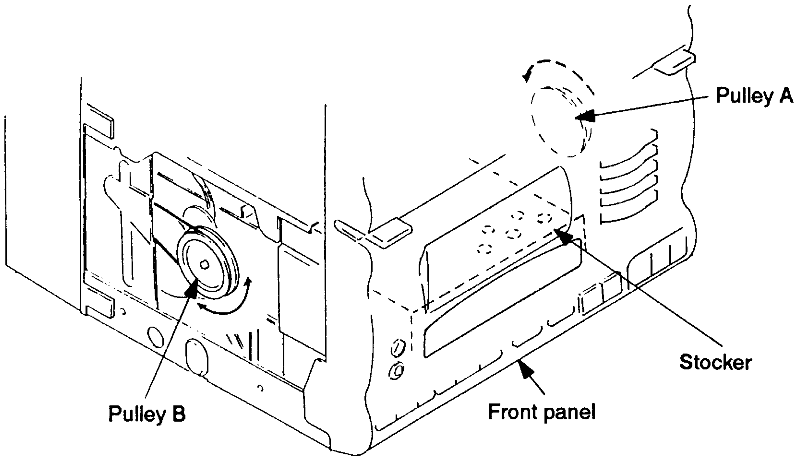
2) Turn the pulley A in the arrow ↻ direction and make sure that the disc tray moves in the arrow ⇦ direction. And further turn the pulley A until the tray aligns with other trays.


Tray
Front panel
Pulley A

3) Open the front panel lid. Turn the pulley B to allow the stock, which has the disc tray, to go up and down until the disc inserted tray aligns with the front panel lid position .

4) Turn the pulley A in the arrow ○ direction to allow the disc inserted tray to be ejected. Take out the disc and turn the pulley A in the reverse direction to allow the disc inserted tray to align with other trays.

In case two or more trays have discs, repeat step 3) and 4).



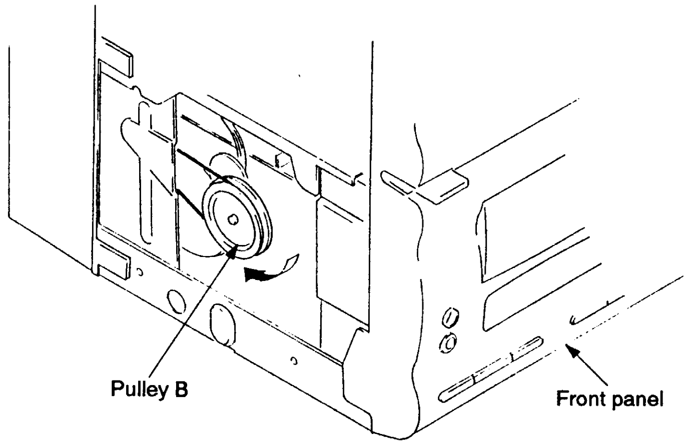
※2 Initial setting procedures

1) In case turning ON the system power supply allows the mechanism to work:
Fist, make sure that all discs have been taken out.

Open the disc No.1.
↓
Turn OFF the system power supply.
↓
Make sure that ''OFF" appears on the CD display.
↓
Blinking and character disappearing indicates setting completion.

2) In case turning ON the system power supply does not allow the mechanism to work:
Move the disc tray as shown in Fig.

Initial Setting Procedures



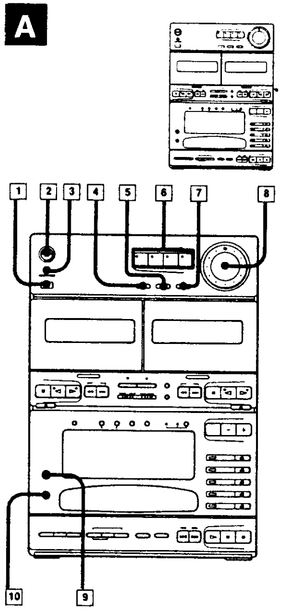
※ Make sure that all trays are in the correct positions. Turn the pulley B in the arrow direction until it stops.

SECTION 2
GENERAL

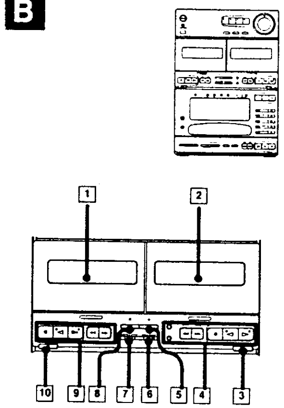
This section is extracted from instruction manual.

Parts Identification

A



B



Amplifier Section A

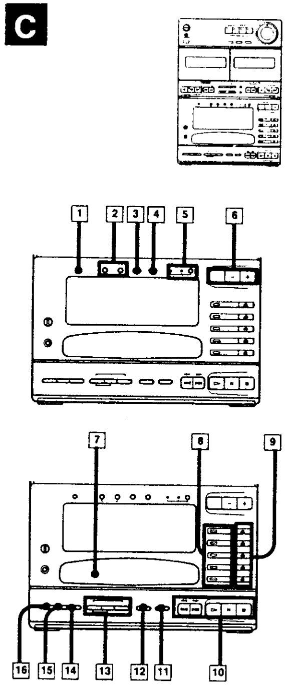
1 Remote control sensor
2 POWER ON/STANDBY button
3 HEADPHONES jack (stereo minijack)
4 PRESET button
5 DBFB (Dynamic Bass Feedback) button

6 Function buttons and indicators
TAPE
CD
TUNER
MD/PHONO
7 SURROUND button
8 VOLUME control
9 MIC (microphone) LEVEL control
10 MIX MIC (microphone) input jack (minijack)

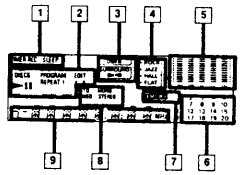
Cassette Deck Section B

1 Cassette holder (Deck A)
2 Cassette holder (Deck B)
3 ⏏ Eject button (Deck B)
4 Tape operation buttons (for Deck B)
■: Stop button
▷: Forward play button and indicator
◁: Reverse play button and indicator
AMS ◀◀▶▶: Fast winding buttons
II PAUSE: Pause button and indicator
● REC: Recording button and indicator
5 CD SYNCHRO button and indicator
6 DOLBY NR (Dolby Noise Reduction) selector
7 DIRECTION mode selector
8 HIGH SPEED DUBBING button and indicator
9 Tape operation buttons (for Deck A)
■: Stop button
▷: Forward play button and indicator
◁: Reverse play button and indicator
AMS ◀◀▶▶: Fast winding buttons
10 ⏏ Eject button (Deck A)

C



D



Tuner/CD Player Section C

Tuner

1 CLOCK DISPLAY button
2 CLOCK SET buttons
TIMER button
TIMER REC button
3 MEMORY/NEXT button
4 ST/MONO button
5 MODE button
TUNING indicator
PRESET indicator
6 PRESET/TIMER buttons
BAND button
–/+ buttons

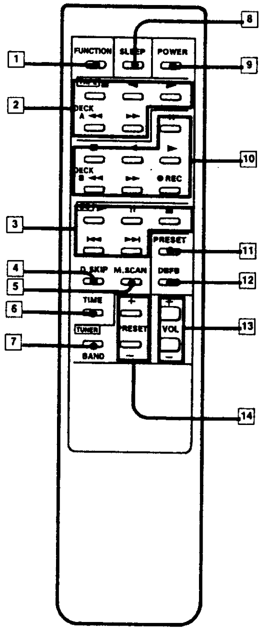
CD Player

7 Disc tray door
8 DISC 1 — 5 selectors and disc tray indicators
9 OPEN/CLOSE ⏏ buttons
10 CD operation buttons
■: Stop
II: Pause
▷: Play
|◁◁◀◀ ▶▶▷▷|: Manual search (When kept pressed)/Automatic Music Sensor (When pressed)
11 MUSIC SCAN button
12 REPEAT button
13 PLAY MODE buttons
CONTINUE button
SHUFFLE button
PROGRAM button
14 CLEAR button
15 CHECK button
16 EDIT button

Display Window D

1 Timer indications
2 CD playing/editing mode indications
3 DBFB/SURROUND on/off indications
4 Sound Field Coordinator display
ROCK
JAZZ
HALL
FLAT
5 Spectrum analyzer display
6 CD selection numbers display
Preset station number display
7 MEMORY indication
8 Tuner indication
9 Preset menu/Tuner/Timer/CD player display

E

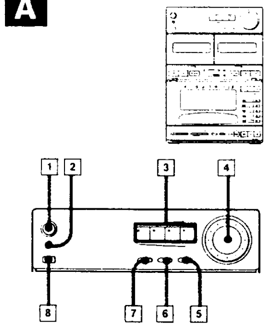


Remote Commander E

1 FUNCTION button
2 Cassette deck operation buttons (for Deck A)
3 CD operation buttons
4 D. SKIP button
5 M. SCAN button
6 TIME button
7 BAND button
8 SLEEP button
9 POWER button
10 Cassette deck operation buttons (for Deck B)
11 PRESET button
12 DBFB button
13 VOL +/– buttons
14 PRESET +/– buttons

Parts Identification

A



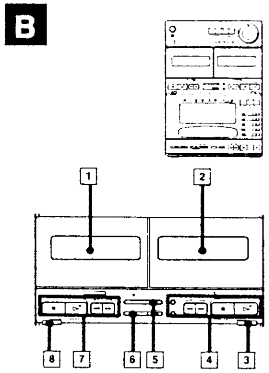
Refer to the pages indicated in ( ) for use of the buttons.

Amplifier Section A

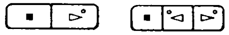
1 POWER ON/STANDBY button
2 HEADPHONES jack (stereo minijack)
3 Function buttons and indicators
  MD/VIDEO
  TAPE
  CD
  TUNER
4 VOLUME control
5 SURROUND button
6 DBFB (Dynamic Bass Feedback) button

7 PRESET button
8 Remote control sensor

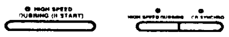
B



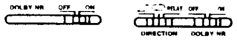
4 (the U.S. model) (the Canadian model)



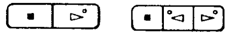
5 (the U.S. model) (the Canadian model)


HIGH SPEED DUBBING (R START)
HIGH SPEED DUBBING
CD SYNCHRO

6 (the U.S. model) (the Canadian model)


DOLBY NR
OFF
ON
RELAY
OFF
ON
DIRECTION
DOLBY NR

7 (the U.S. model) (the Canadian model)

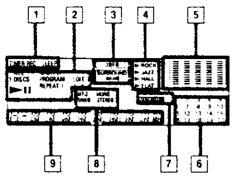


Cassette Deck Section B

1 Cassette holder (Deck A)
2 Cassette holder (Deck B)
3 ⏏ Eject button (Deck B)
4 Tape operation buttons (for Deck B)
  ■: Stop button
  ▷: Play button and indicator
  AMS ◀◀▶▶: Fast winding buttons
  ❙❙ PAUSE: Pause button and indicator
  ●REC: Recording button and indicator
  (For the Canadian model only)
  ◁: Reverse play button and indicator
5 HIGH SPEED DUBBING button and indicator
  (For the Canadian model only)
  CD SYNCHRO button and indicator
6 DOLBY NR (Dolby Noise Reduction) selector
  (For the Canadian model only)
  DIRECTION mode selector
7 Tape operation buttons (for Deck A)
  ■: Stop button
  ▷: Play button and indicator
  AMS ◀◀▶▶ Fast winding buttons
  ❙❙ PAUSE: Pause button and indicator
  ● REC: Recording button and indicator
  (For the Canadian model only)
  ◁: Reverse play button and indicator
8 ⏏ Eject button (Deck A)

Parts Identification

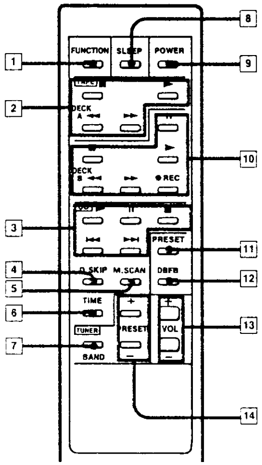
D



Display Window D

1 Timer indications
2 CD playing/editing mode indications
3 DBFB/SURROUND on/off indications
4 Sound Field Coordinator display
  ROCK
  JAZZ
  HALL
  FLAT
5 Spectrum analyzer display
6 CD selection numbers display
  Preset station number display
7 MEMORY indication
8 Tuner indication
9 Preset menu/Tuner/Timer/CD player display

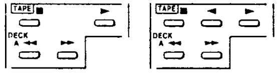
E


FUNCTION
SLEEP
POWER
TAPE
DECK A
DECK B
●REC
PRESET
D.SKIP
M.SCAN
DBFB
TIME
TUNER
BAND
RESET
VOL
1
2
3
4
5
6
7
8
9
10
11
12
13
14

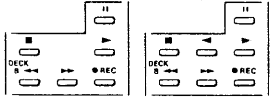
Remote Commander E

1 FUNCTION button
2 Cassette deck operation buttons (for Deck A)
3 CD operation buttons
4 D. SKIP button
5 M. SCAN button
6 TIME button
7 BAND button
8 SLEEP button
9 POWER button
10 Cassette deck operation buttons (for Deck B)
11 PRESET button
12 DBFB button
13 VOL +/– buttons
14 PRESET +/– buttons

2 (the U.S. model) (the Canadian model)

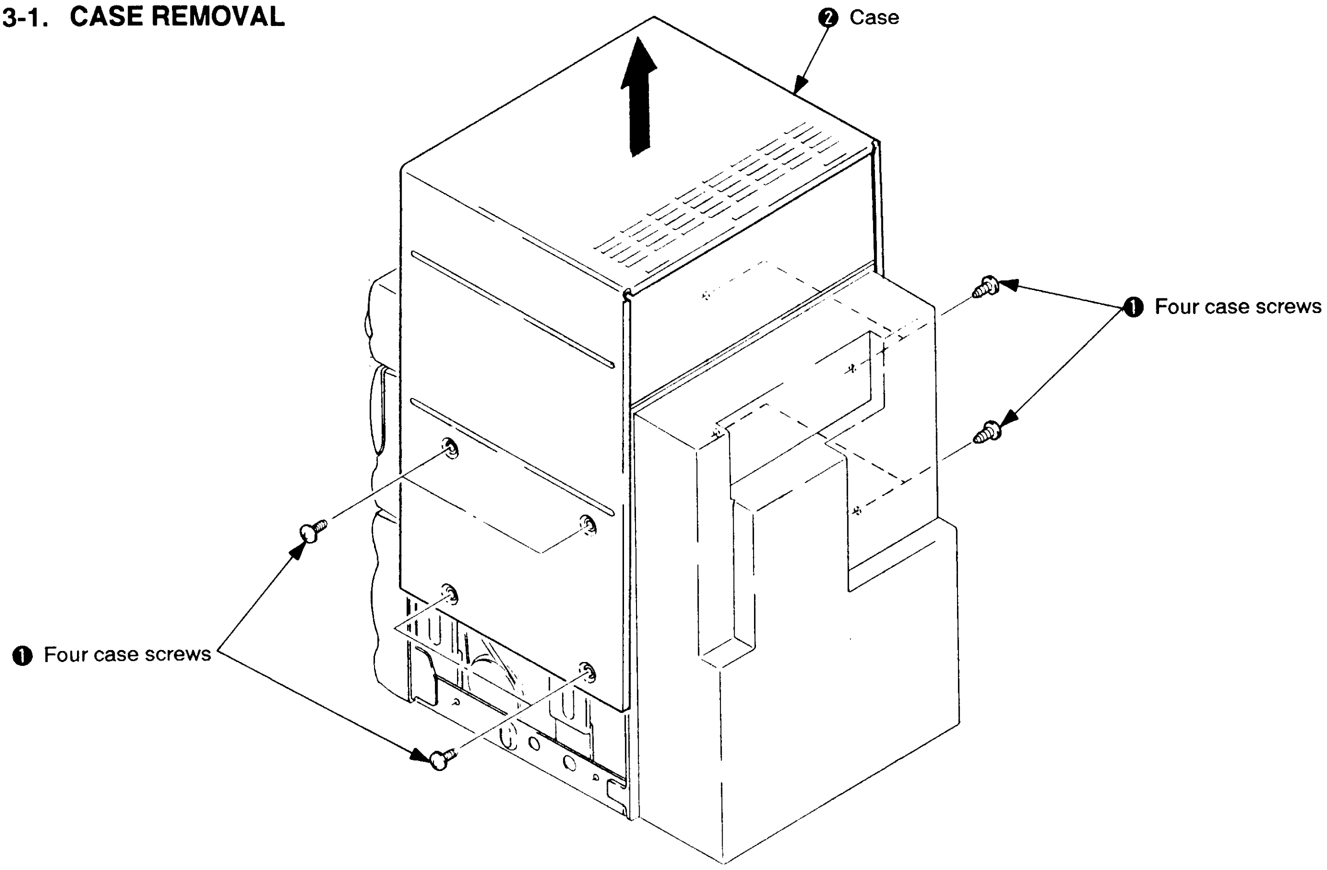

TAPE
DECK A
TAPE
DECK A

10 (the U.S. model) (the Canadian model)

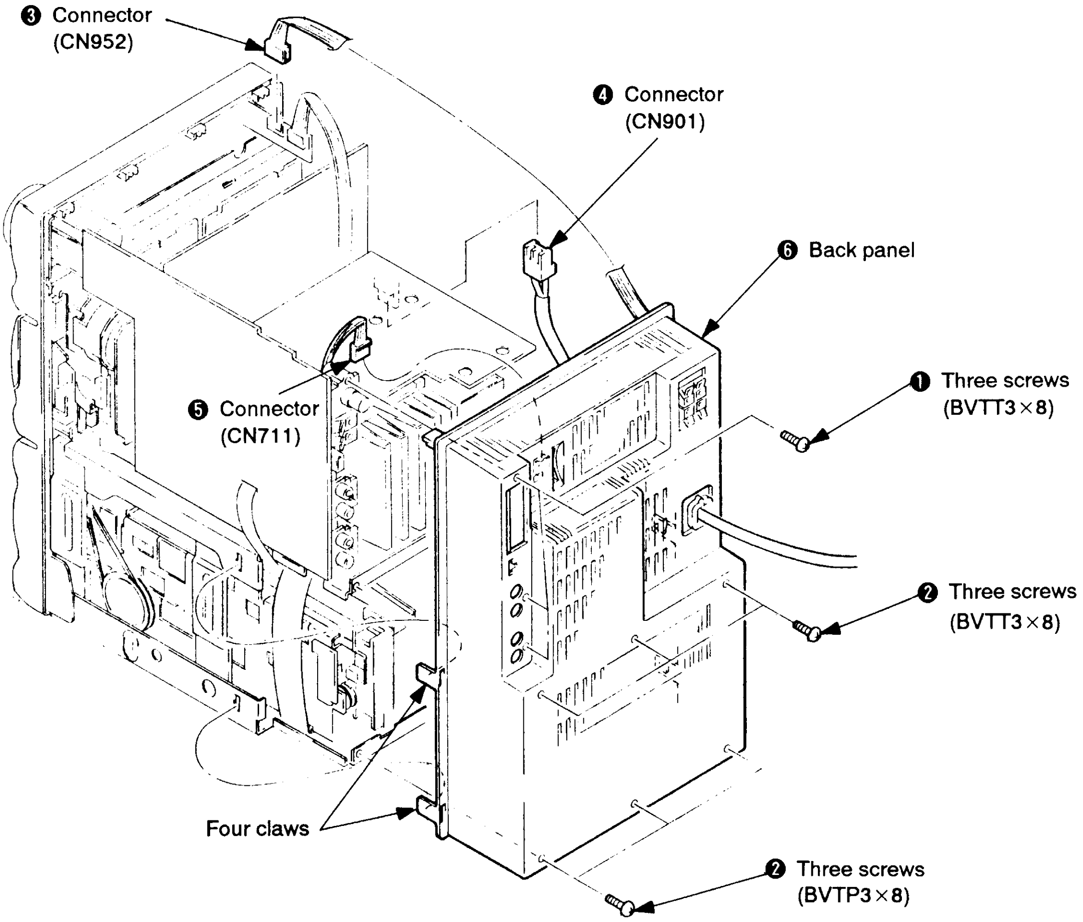

DECK B
●REC
DECK B
●REC

SECTION 3
DISASSEMBLY

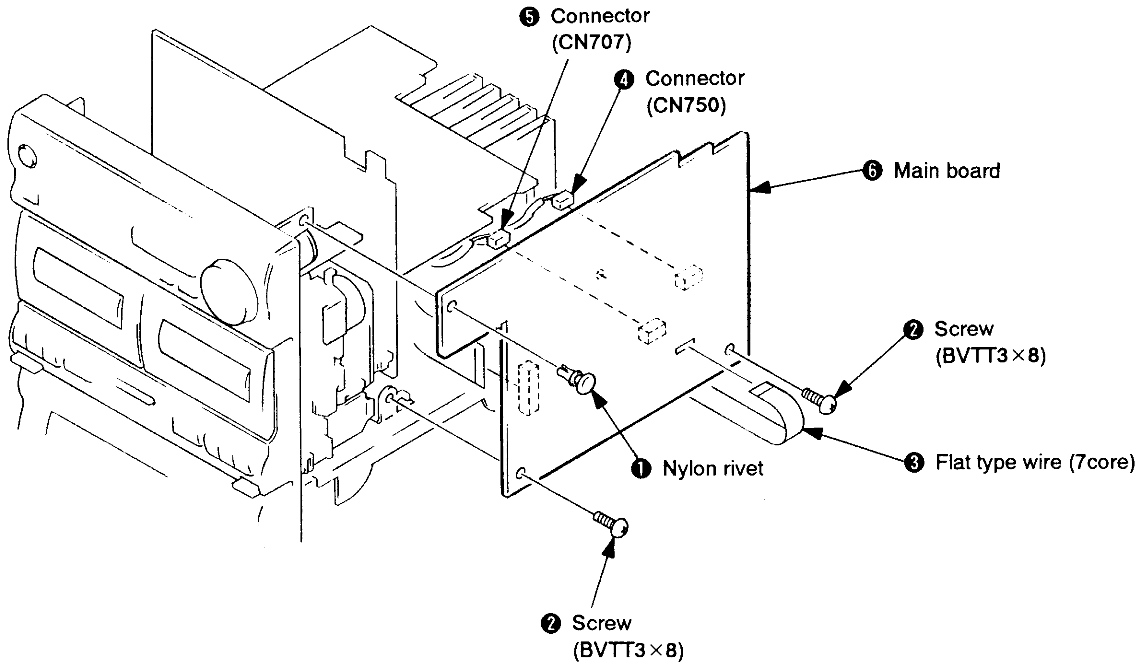
3-1. CASE REMOVAL


❷ Case
❶ Four case screws
❶ Four case screws

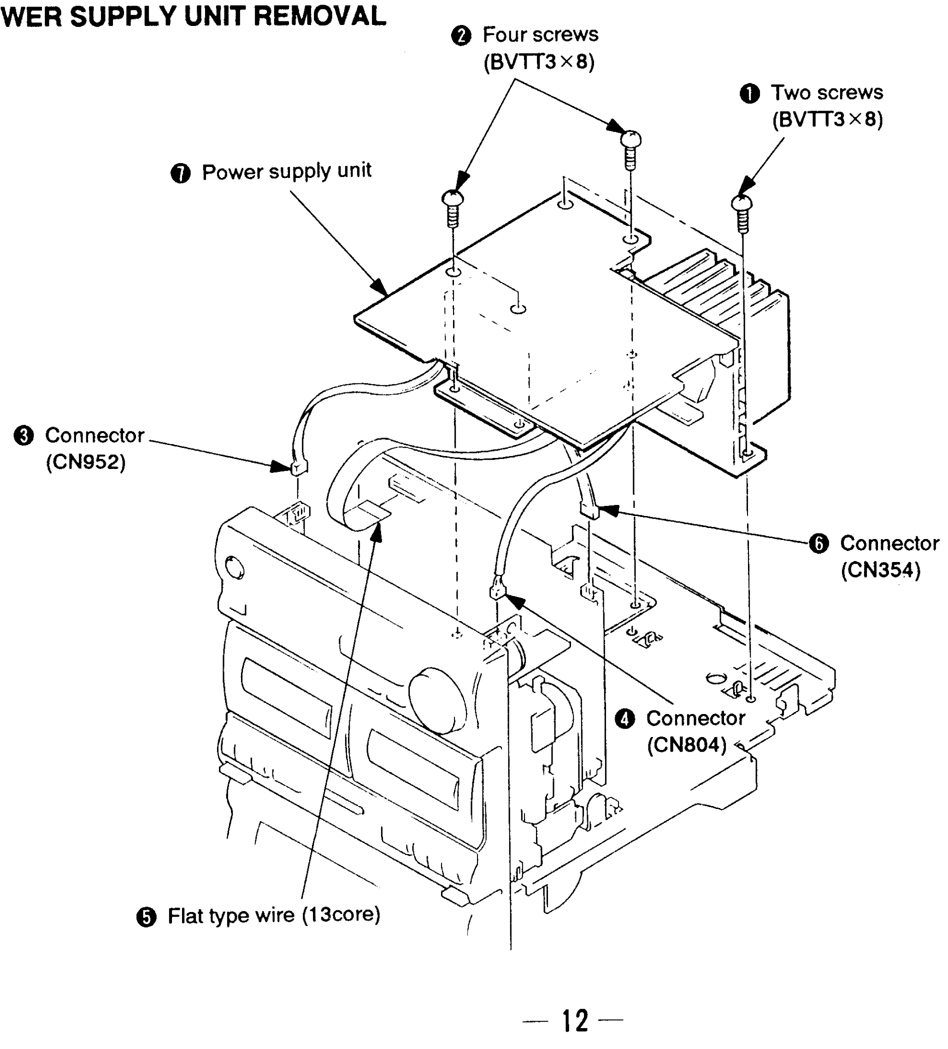
3-2. BACK PANEL REMOVAL


❸ Connector (CN952)
❹ Connector (CN901)
❻ Back panel
❶ Three screws (BVTT3×8)
❺ Connector (CN711)
❷ Three screws (BVTT3×8)
Four claws
❷ Three screws (BVTP3×8)

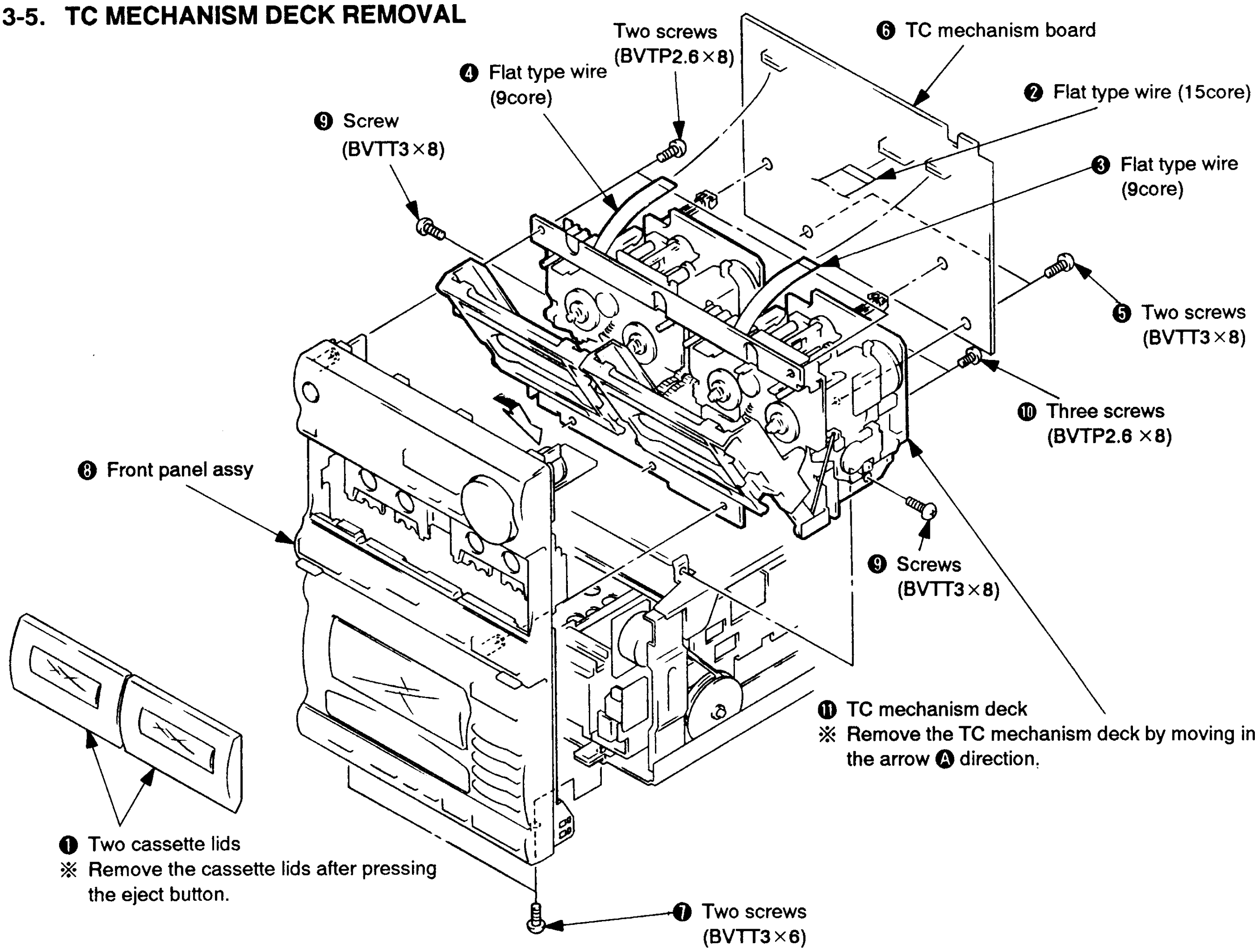
3-3. MAIN BOARD REMOVAL


❺ Connector (CN707)
❹ Connector (CN750)
❻ Main board
❷ Screw (BVTT3×8)
❸ Flat type wire (7core)
❶ Nylon rivet
❷ Screw (BVTT3×8)

3-4. POWER SUPPLY UNIT REMOVAL


❷ Four screws (BVTT3×8)
❶ Two screws (BVTT3×8)
❼ Power supply unit
❸ Connector (CN952)
❻ Connector (CN354)
❹ Connector (CN804)
❺ Flat type wire (13core)

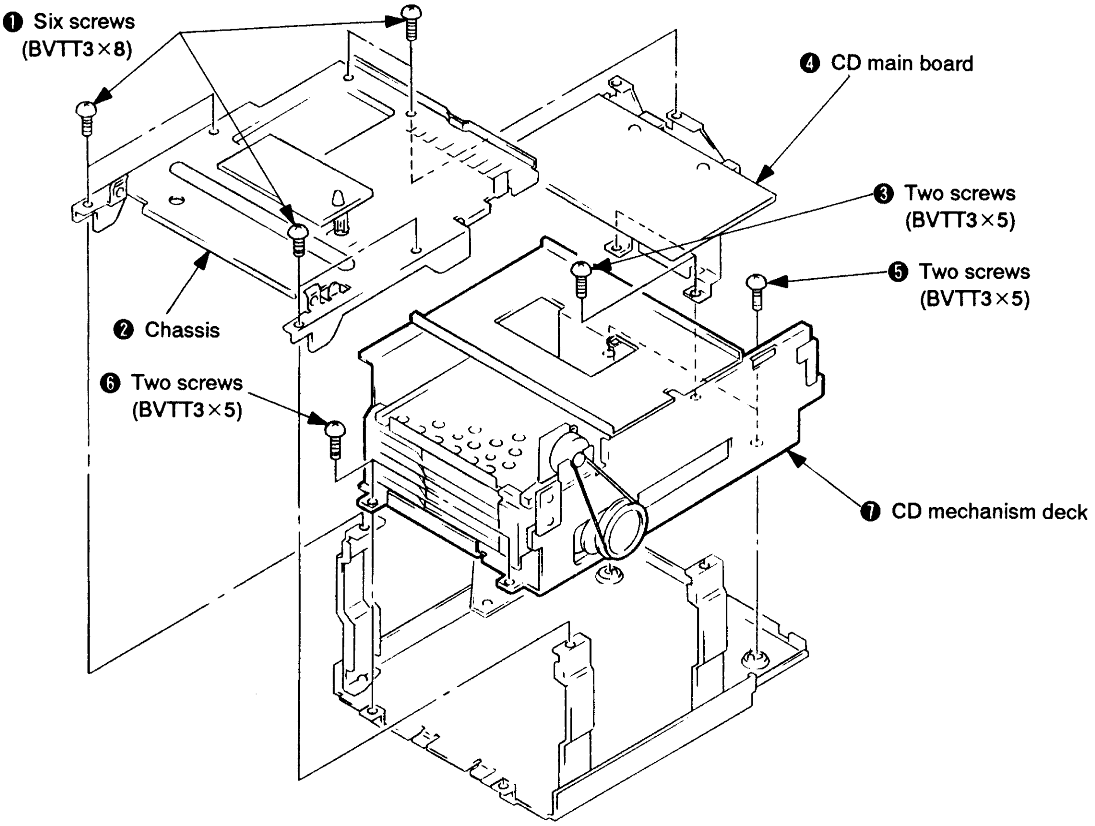
3-5. TC MECHANISM DECK REMOVAL


Two screws (BVTP2.6×8)
❹ Flat type wire (9core)
❻ TC mechanism board
❷ Flat type wire (15core)
❾ Screw (BVTT3×8)
❸ Flat type wire (9core)
❺ Two screws (BVTT3×8)
❿ Three screws (BVTP2.6 ×8)
❽ Front panel assy
❾ Screws (BVTT3×8)
⓫ TC mechanism deck
❶ Two cassette lids
❼ Two screws (BVTT3×6)

※ Remove the TC mechanism deck by moving in the arrow Ⓐ direction.

※ Remove the cassette lids after pressing the eject button.

3-6. CD MECHANISM DECK REMOVAL


❶ Six screws (BVTT3×8)
❹ CD main board
❸ Two screws (BVTT3×5)
❺ Two screws (BVTT3×5)
❷ Chassis
❻ Two screws (BVTT3×5)
❼ CD mechanism deck

SECTION 4
MECHANICAL ADJUSTMENTS

PRECAUTION

1. Clean the following parts with a denatured alcohol-moistened swab:

record/playback head	pinch roller
erase head	rubber belt
capstan	idler

2. Demagnetize the record/playback head with a head demagnetizer.
3. Do not use a magnetized screwdriver for the adjustment.
4. After the adjustments, apply suitable locking compound to the parts adjusted.
5. The adjustment should be performed with the rated power supply voltage unless otherwise noted.

• Torque Measurement

Torque	Torque meter	Meter reading
Forward	CQ-102C	30 to 70g • cm (0.42 to 0.97oz • inch)
Forward back tension	CQ-102C	1.5 to 5.5 g • cm (0.020 to 0.076oz • inch)
Reverse	CQ-102RC	30 to 70g • cm (0.42 to 0.97oz • inch)
Reverse back tension	CQ-102RB	1.5 to 5.5 g • cm (0.020 to 0.076oz • inch)
FF/REW	CQ-201B	60 g • cm or more (0.82oz • inch or more)

SECTION 5
ELECTRICAL ADJUSTMENTS

DECK SECTION

1. The adjustment should be performed in the publication. (Be sure to make playback adjustment at first.)
2. The adjustment and measurement should be performed for both L-CH and R-CH.
   - Switch position
     DOLBY NR switch: OFF
     Function switch: TAPE
3. Perior to electrical adjustments, short the TP1 (IC202(63) PIN) to TP2 (GND) (test mode).

• Test Tape

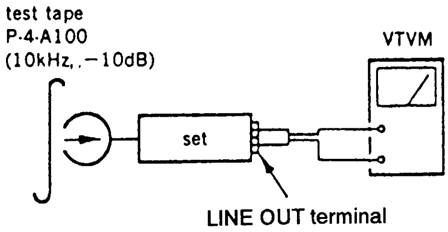
Tape	Contents	Use
P-4-A100	10kH, −10dB	Head Azimuth Adjustment
P-4-L300	315Hz, 0dB	Level Adjustment
WS-48B	3kHz, 0dB	Tape Speed Adjustment

Record/Playback Head Azimuth Adjustment

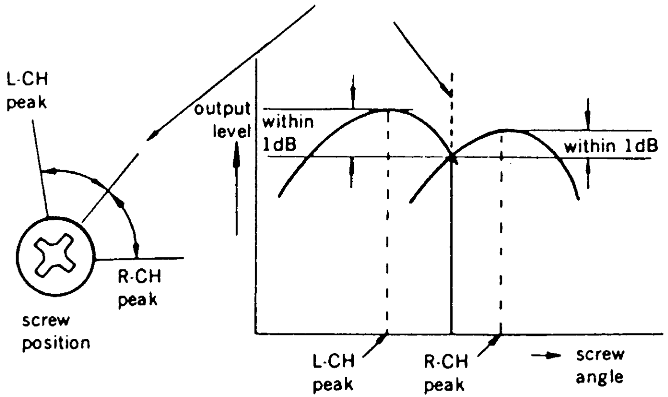
DECK A **DECK B**

Procedure:

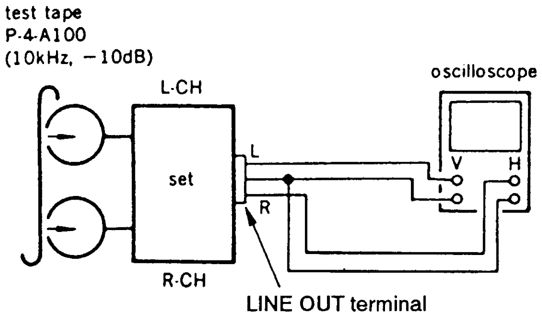
1. Forward Playback Mode
   Reverse Playback Mode (except C50U model)

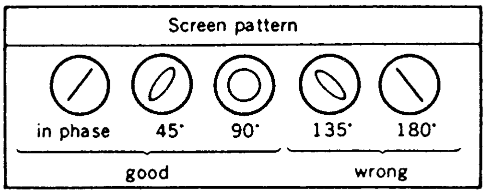


2. Turn the adjustment screw for the maximum output levels. If these levels do not match, turn the adjustment screw until both of output levels match together within 1 dB.


L-CH peak
R-CH peak
screw position
output level
within 1dB
within 1dB
L-CH peak
R-CH peak
screw angle

3. Phase Check

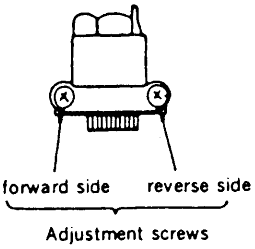

test tape
P-4-A100
(10kHz, −10dB)
L-CH
set
R-CH
L
R
oscilloscope
V
H
LINE OUT terminal

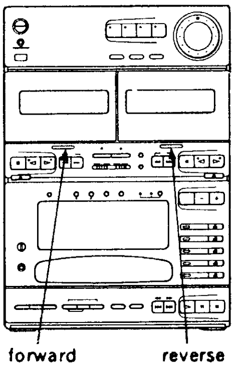

Screen pattern
in phase
45°
90°
135°
180°
good
wrong

4. Change the review playback mode and repeat the steps 1 to 3.
5. After the adjustment, lock the adjustment screw with suitable locking compound.

Adjustment Location: Record/Playback head (DECK A, B)

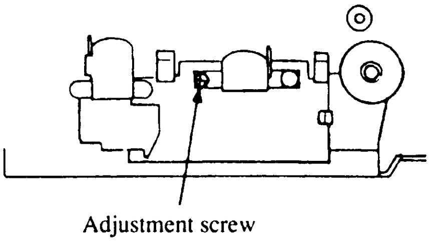
C50 model :


forward side
reverse side
Adjustment screws


forward
reverse

(C50 model)

C50U model :

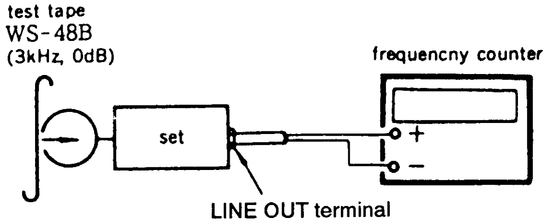


Adjustment screw

Tape Speed Adjustment DECK A DECK B (C50 model)

Procedure:

- Perform high speed adjustment before normal speed adjustment.
  Mode: playback


test tape
WS-48B
(3kHz, 0dB)
set
frequencny counter
+
−
LINE OUT terminal

Speed	Deck	Adjustment point	Frequency counter
※High	A	RV72A	5,970 to 6,030 Hz
	B	RV72B	
Normal	A	RV71A	2,985 to 3,015 Hz
	B	RV72B	

※ Continue to press HIGH SPEED DUBBING switch (S316) in playback mode : High speed playback.

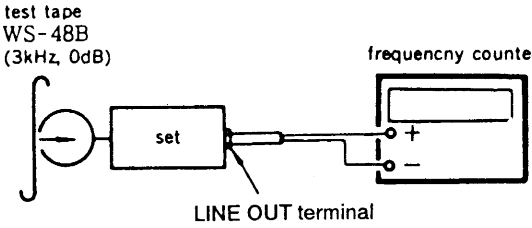
Frequency difference between the begining and the end of the tape should be within ±3%.
Frequency difference between deck A and deck B the begining of the tape should be within 1.5%.

Adjustment Location: MD-A and MD-B boards.

Tape Speed Adjustment (C50U model)

Procedure:

- Perform high speed adjustment before normal speed adjustment.
  Mode: playback


test tape
WS-48B
(3kHz, 0dB)
set
frequencny counter
+
−
LINE OUT terminal

Speed	Adjustment point	Frequency counter
※High	RV351	5,970 to 6,030 Hz
Normal	RV352	2,985 to 3,015 Hz

※ Continue to press HIGH SPEED DUBBING switch (S907) in playback mode : High speed playback.

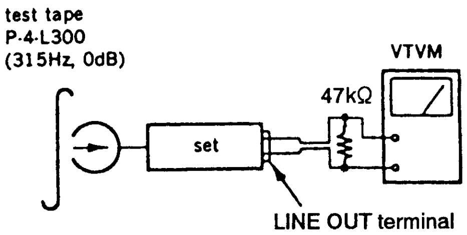
Frequency difference between the begining and the end of the tape should be within ±3%.
Frequency difference between deck A and deck B the begining of the tape should be within 1.5%.

Adjustment Location: TC MAIN (U) board.

Playback Level Adjustment DECK A DECK B

Procedure:

Mode: playback


test tape
P-4-L300
(315Hz, 0dB)
VTVM
47kΩ
set
LINE OUT terminal

Deck A is RV11A (C50), RV201 (C50U) (L-CH) and RV21A (C50), RV251 (C50U) (R-CH), deck B is RV11B (C50), RV211 (C50U) (L-CH) and RV21B (C50), RV261 (C50U) (R-CH) so that adjustment within adjustment level as follows.

Adjustment Level:
LINE OUT level: –10dB ±0.5dB (0.23 to 0.26V)
Level Difference between Channels: within 0.5dB

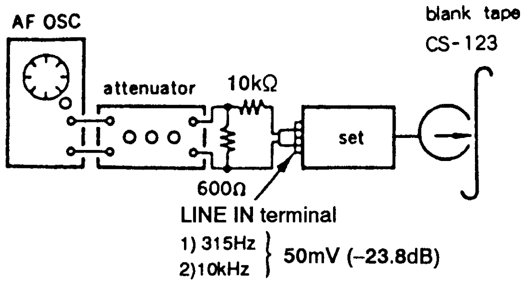
Confirm the LINE OUT level does not change in playback mode while changing the mode from playback to stop several times.

Adjustment Location: MD-A and MD-B boards (C50 model)
TC MAIN (U) board (C50U model)

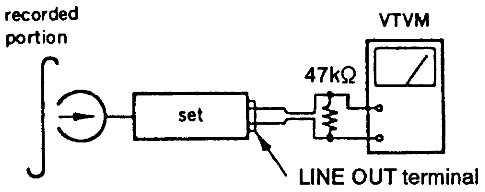
Record Bias Adjustment DECK B

Procedure:

1. record mode
   function switch : MD/PHONO or MD/VIDEO


AF OSC
blank tape
CS-123
attenuator
10kΩ
set
600Ω
LINE IN terminal
1) 315Hz
2) 10kHz
50mV (–23.8dB)

2. playback mode
   function switch : TAPE


recorded
portion
VTVM
47kΩ
set
LINE OUT terminal

Confirm playback the signal recorded in step 1 become adjustment level as follows.
If these levels do not adjustment level, adjustment the RV12 (C50), RV221 (C50U) (L-CH) and RV22 (C50), RV271 (C50U) (R-CH) to repeat step 1 and 2.

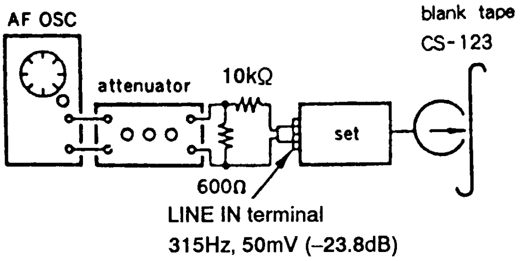
Adjustment Level: Playback output of 10kHz to playback output of 315Hz: –0.5dB to 0.5dB.

Adjustment Location: MD-B board (C50 model)
: TC MAIN (U) board (C50U model)

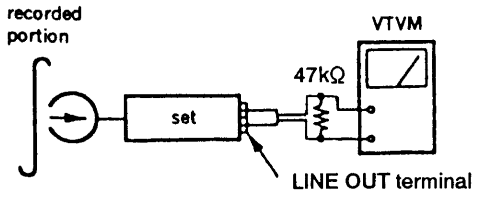
Record Level Adjustment DECK B

Procedure:

1. record mode
   function switch : MD/PHONO or MD/VIDEO


AF OSC
blank tape
CS-123
attenuator
10kΩ
set
600Ω
LINE IN terminal
315Hz, 50mV (–23.8dB)

2. playback mode
   function switch : TAPE


recorded
portion
VTVM
47kΩ
set
LINE OUT terminal

Confirm playback the signal recorded in step 1 become adjustment level as follows.
If these levels do not adjustment level, adjustment the RV301 (C50), RV231 (C50U) (L-CH) and RV201 (C50), RV281 (C50U) (R-CH) to repeat step 1 and 2.

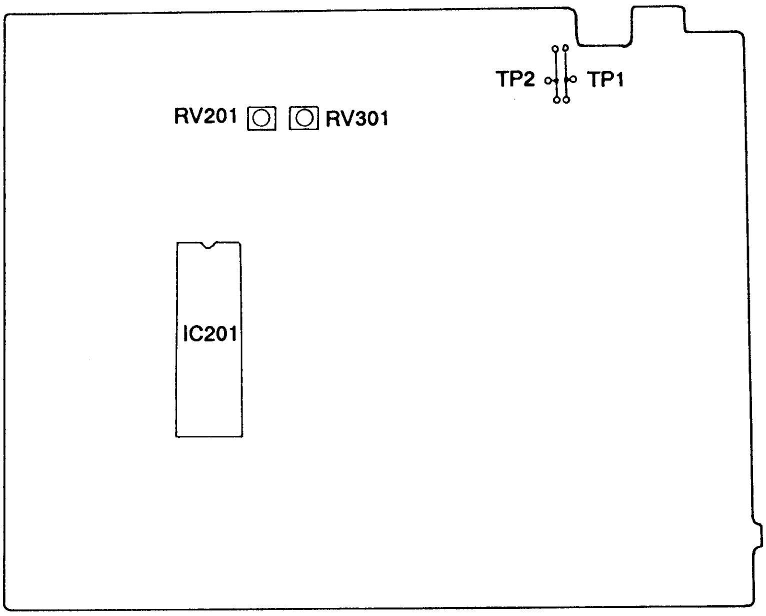
Adjustment Level:
LINE OUT level: –23.8dB±0.5dB (47 to 53mV).

Adjustment Location: TC MAIN board (C50 model)
TC MAIN (U) board (C50U model)

Adjustment Location:

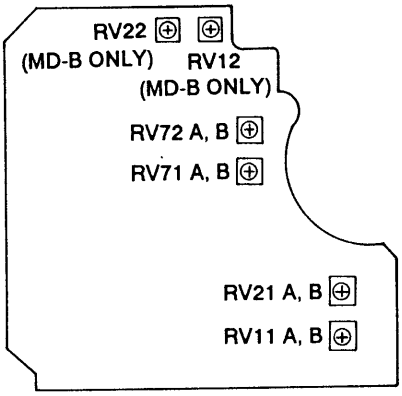
C50 model

[TC MAIN BOARD] — COMPONENT SIDE —


TP2
TP1
RV201
RV301
IC201

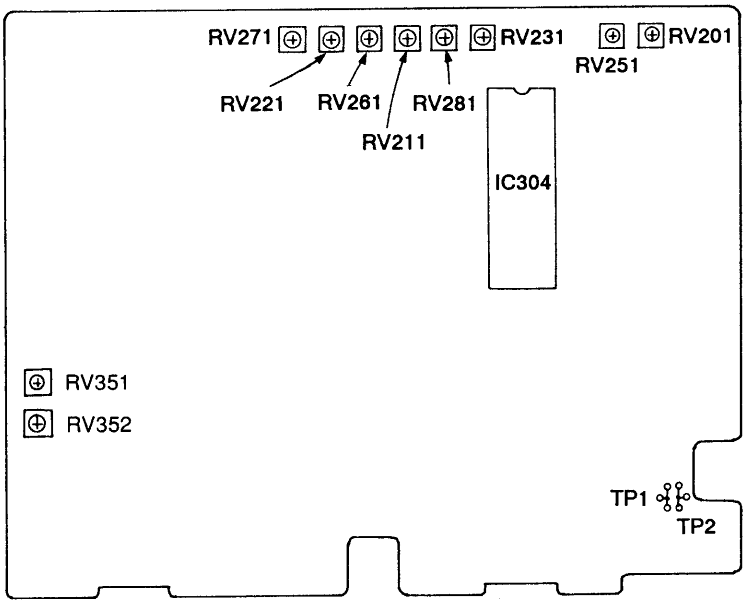
[MD-A & MD-B BOARD]

— COMPONENT SIDE —


RV22
(MD-B ONLY)
RV12
(MD-B ONLY)
RV72 A, B
RV71 A, B
RV21 A, B
RV11 A, B

C50U model

[TC MAIN (U) BOARD] — COMPONENT SIDE —

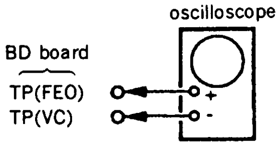

RV271
RV231
RV201
RV251
RV221
RV261
RV281
RV211
IC304
RV351
RV352
TP1
TP2

CD SECTION

Note :

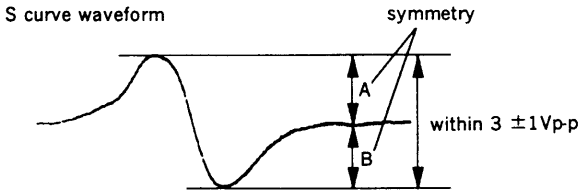
1. CD Block basically constructed to operate without adjustment. Therefore, check each item in order given.
2. Use YEDS-18 disc (3-702-101-01) unless otherwise indicated.
3. Use the oscilloscope with more than 10MΩ impedance.
4. Clean an object lens by an applicator with neutral detergent when the signal level is low than specified value with the following checks.

S Curve Check


oscilloscope
BD board
TP(FEO)
TP(VC)
+
-

Procedure :

1. Connect oscilloscope to test point TP (FEO) on BD board.
2. Connect between test point TP (FES) and TP (VC) by lead wire.
3. Turned Power switch on and actuate the focus serch. (actuate the focus serch when disc table is moving in and out.)
4. Check the oscilloscope waveform (S curve) is symmetrical between A and B. And confirm peak to peak level within 3±1Vp-p.

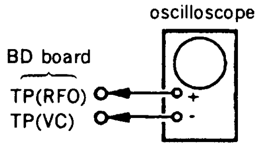

S curve waveform
symmetry
A
B
within 3 ±1Vp-p

5. After check, remove the lead wire connected in step 2.

Note : ● Try to mesure several times to make sure that the ratio of A : B or B : A is more than 10 : 7.

● Take sweep time as long as possible and light up the brightness to obtain best waveform.

RF Level Check

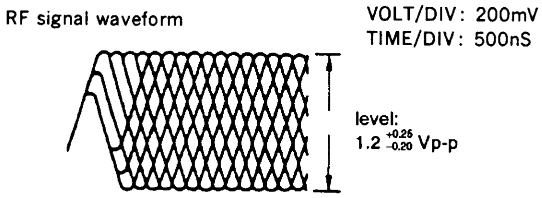

oscilloscope
BD board
TP(RFO)
TP(VC)
+
-

Procedure :

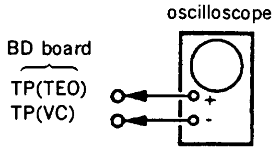
1. Connect oscilloscope to test point TP (RFO) on BD board.
2. Turn Power switch on.
3. Put disc (YEDS-18) in and playback.
4. Confirm that oscilloscope waveform is clear and check RF signal level is correct or not.

Note :

Clear RF signal waveform means that the shape "◇" can be clearly distinguished at the center of the waveform.

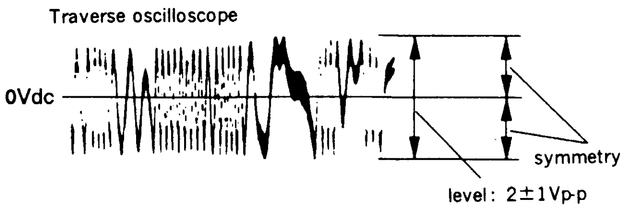

RF signal waveform
VOLT/DIV: 200mV
TIME/DIV: 500nS
level:
1.2 $^{+0.25}_{-0.20}$ Vp-p

E-F Balance Check


oscilloscope
BD board
TP(TEO)
TP(VC)
+
-

Procedure :

1. Connect test point TP (ADJ) on CD MAIN board to ground and TP (TES) to TP (VC) with lead wire.
2. Connect oscilloscope to test point TP (TEO) on BD board.
3. Turn Power switch on.
4. Put disc (YEDS-18) in and playback.
5. Confirm that the osilloscope waveform is symmetrical on the top and bottom in relation to 0Vdc, and check this level.

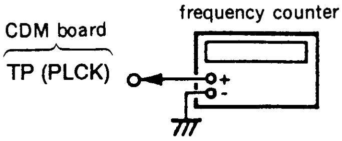

Traverse oscilloscope
0Vdc
symmetry
level: 2±1Vp-p

6. Remove the lead wire connected in step 1.

RF PLL Free-run Frequency Check

Procedure :

1. Connect frequency counter to test point (PLCK : IC202 ㊶ PIN with lead wire.


frequency counter
CDM board
TP (PLCK)
+
-

2. Turn Power switch on.
3. Confirm that reading on frequency counter is 4.3218MHz.

Focus/Tracking Gain

This gain has a margin, so even if it is slightly off.

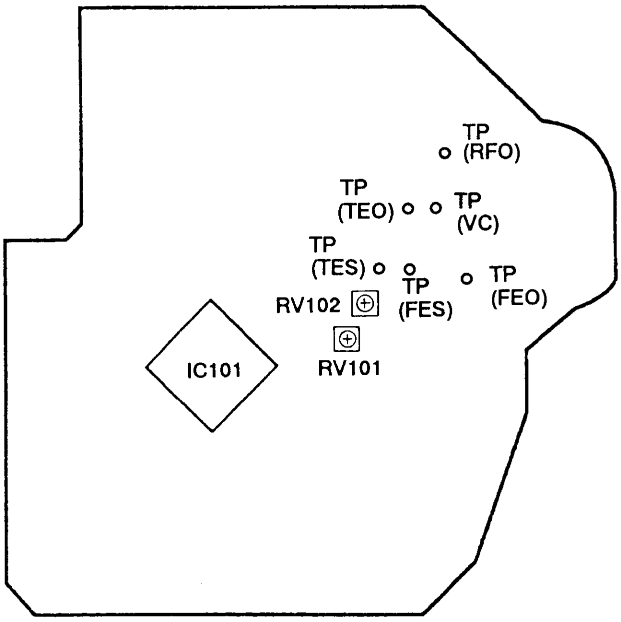
There is no problem.

Therefore, do not perform, this adjustment.

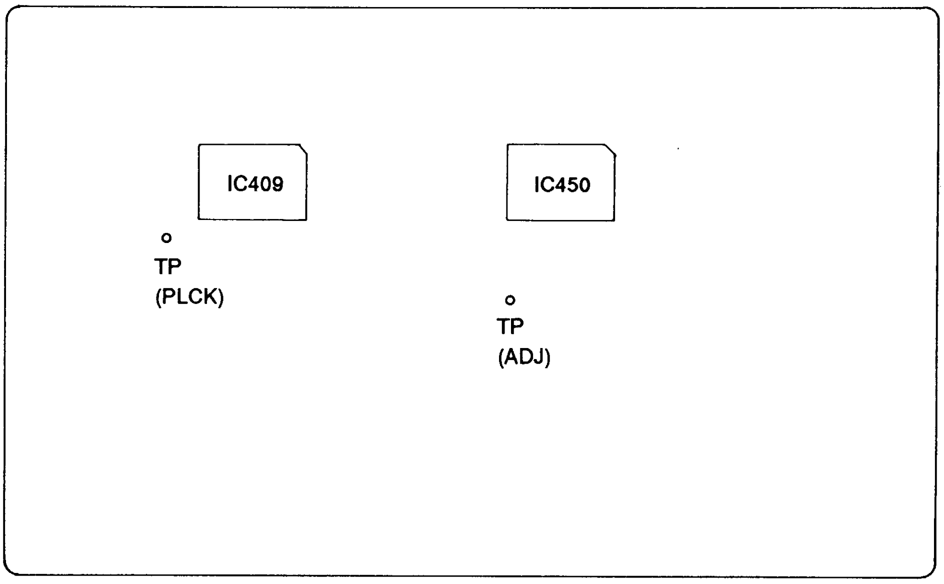
Please note that it should be fixed to mechanical center position when you moved and do not know original position.

Adjustment Location:

[BD BOARD] — CONDUCTOR SIDE —


TP
(RFO)
TP
(TEO)
TP
(VC)
TP
(TES)
TP
(FES)
TP
(FEO)
RV102
RV101
IC101

[CD MAIN BOARD] — CONDUCTOR SIDE —

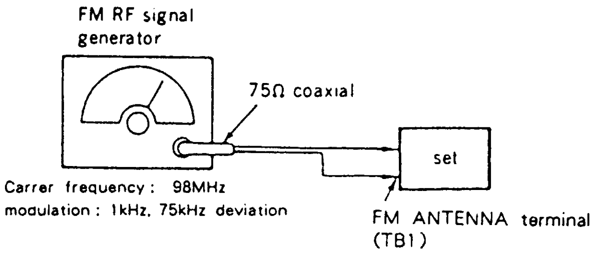

IC409
IC450
TP
(PLCK)
TP
(ADJ)

TUNER SECTION

Note : As a front-end (FE1) is difficult to repair if faulty, replace it with new one.

FM SECTION ADJUSTMENTS

Setting:


FM RF signal generator
75Ω coaxial
set
Carrer frequency : 98MHz
modulation : 1kHz, 75kHz deviation
FM ANTENNA terminal (TB1)

FM Tuned Indication Lighting Level Adjustment

Band: FM

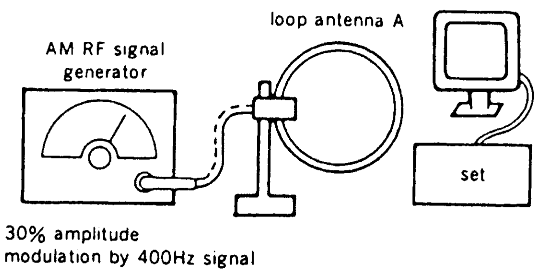
Procedure:

1. Supply a 12.6μV (22dBμ) 98MHz signal from the ANTENNA terminal.
2. Tune the set to 98MHz.
3. Adjust RV51 so that the TUNED light up.
4. Confirm that TUNED light off with FM RF signal generator output level set at 19dBμ.

AM SECTION ADJUSTMENTS

(C50: E, EA, AUS, SP, PX, model)

Setting:


loop antenna B
loop antenna A
AM RF signal generator
set
30% amplitude modulation by 400Hz signal

SW OSC Voltage Adjustment

Band: SW

Procedure:

1. Connect the Digital voltmeter to C32.
2. Tune the set to 5.95MHz.
3. Adjust T2 for 0.9 to 1.1Vdc reading on the Digital voltmeter.
4. Tune the set to 17.90MHz.
5. Adjust CV2 for 8.3 to 8.7Vdc reading on the Digital voltmeter.

SW Tracking Adjustment

Band: SW

Procedure:

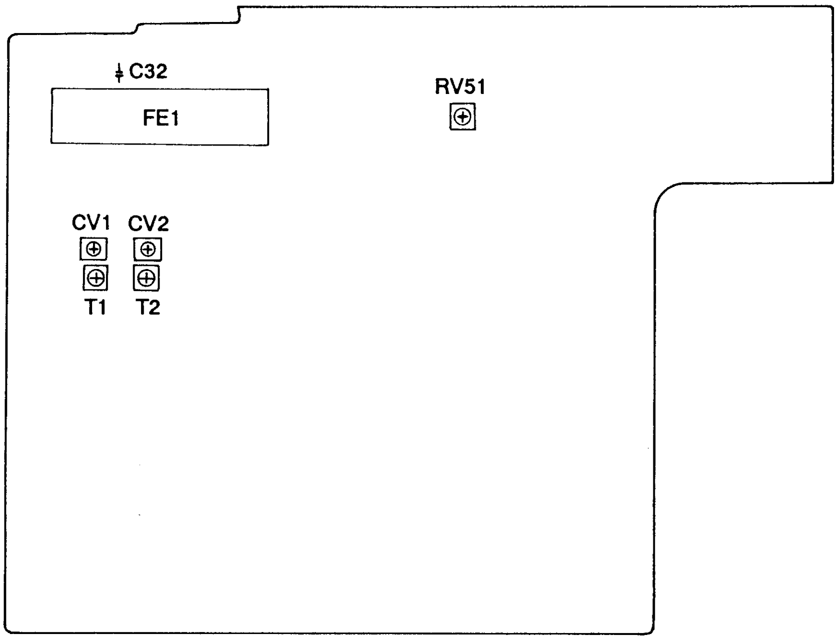
1. Connect the VTVM to speaker terminal.
2. Adjust for a maximum reading on VTVM (TB951).

Signal generator and Set frequency	Adjustment part
7.0MHz	T1
17.0MHz	CV1

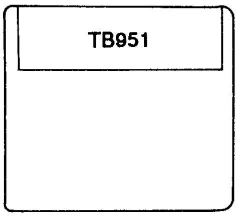
Note : EA: Saudi Arabia
AUS: Australian
SP: Singapore

Adjustment Location:

[MAIN BOARD] — COMPONENT SIDE —


C32
RV51
FE1
CV1
CV2
T1
T2

[SP TM BOARD] — COMPONENT SIDE —



SECTION 6
IC PIN FUNCTIONS

• IC202 DECK CONTROLLER (M50964-260FP)

<table>
<tr><th>Pin No.</th><th>Pin Name</th><th>I/O</th><th>Symbol</th><th>Description</th></tr>
<tr><td>1</td><td>P62</td><td></td><td>G</td><td>GND</td></tr>
<tr><td>2</td><td>P61</td><td></td><td>G</td><td>GND</td></tr>
<tr><td>3</td><td>P60</td><td></td><td>G</td><td>GND</td></tr>
<tr><td>4</td><td>P47</td><td></td><td>G</td><td>GND</td></tr>
<tr><td>5</td><td>P46</td><td></td><td>G</td><td>GND</td></tr>
<tr><td>6</td><td>AN5</td><td>I</td><td>B HALF</td><td>Deck B record prevention claw A, B detection input (Analog)
<table>
<tr><td>Volgate (V)</td><td>1V</td><td>1.9V</td><td>2.8V</td><td>3.9V</td><td>5V</td></tr>
<tr><td>Half</td><td>ON</td><td>ON</td><td>ON</td><td>ON</td><td>OFF</td></tr>
<tr><td>E. PROOF A</td><td>OFF</td><td>ON</td><td>OFF</td><td>ON</td><td>OFF</td></tr>
<tr><td>E. PROOF B</td><td>ON</td><td>ON</td><td>OFF</td><td>OFF</td><td>OFF</td></tr>
</table></td></tr>
<tr><td>7</td><td>AN4</td><td>I</td><td>KEY Y</td><td rowspan="2">KEY input
<table>
<tr><td>Voltage (V)</td><td>0</td><td>0.3</td><td>0.7</td><td>1.2</td><td>1.7</td><td>2.3</td><td>2.8</td><td>3.4</td><td>4.0</td><td>4.5</td><td>5.0</td></tr>
<tr><td>KEY Y</td><td>B■</td><td>B❚❚</td><td>B▶</td><td>B◀</td><td></td><td>A◀◀</td><td>A▶▶</td><td></td><td></td><td>RELAY</td><td>OFF</td></tr>
<tr><td>KEY X</td><td>A■</td><td>A▶</td><td>A◀</td><td>B◀◀</td><td>B▶▶</td><td>B●</td><td>HIGH SPEED DUBBING</td><td></td><td>CD</td><td></td><td></td></tr>
</table></td></tr>
<tr><td>8</td><td>AN3</td><td>I</td><td>KEY X</td></tr>
<tr><td>9</td><td>AN2</td><td>I</td><td>AMS IN</td><td>AMS signal input</td></tr>
<tr><td>10</td><td>P41</td><td>O</td><td>L MUTE</td><td>Line mute output</td></tr>
<tr><td>11</td><td>P40</td><td>O</td><td>$\overline{\text{R MUTE}}$</td><td>mute output</td></tr>
<tr><td>12</td><td>P37</td><td>O</td><td>$\overline{\text{RELAY}}$ (B MD)</td><td>REC/PB change relay output</td></tr>
<tr><td>13</td><td>P36</td><td>O</td><td>$\overline{\text{R}}$/P</td><td>Dolby IC REC/PB select output</td></tr>
<tr><td>14</td><td>P35</td><td>O</td><td>EQ70</td><td>Playback EQ output for playing deck (Not Used)</td></tr>
<tr><td>15</td><td>P34</td><td>O</td><td>SEL A/$\overline{\text{B}}$</td><td>Dolby IC PB input Deck A/B select output</td></tr>
<tr><td>16</td><td>P33</td><td>O</td><td>AMS A/$\overline{\text{B}}$</td><td>AMS AMP input Deck A/B select output</td></tr>
<tr><td>17</td><td>P32</td><td>I</td><td>AU BUS</td><td>AUDIO BUS input</td></tr>
<tr><td>18</td><td>P31</td><td>O</td><td>$\overline{\text{BIAS}}$</td><td>Bias oscillation output</td></tr>
<tr><td>19</td><td>P30</td><td>O</td><td>AUB OUT</td><td>AUDIO BUS output</td></tr>
<tr><td>20</td><td>INT1</td><td>I</td><td>A BUS</td><td>AUDIO BUS normal input</td></tr>
<tr><td>21</td><td>NC</td><td>—</td><td>——</td><td>——</td></tr>
<tr><td>22</td><td>NC</td><td>—</td><td>——</td><td>——</td></tr>
<tr><td>23</td><td>NC</td><td>—</td><td>——</td><td>——</td></tr>
<tr><td>24</td><td>VSS</td><td></td><td>VSS</td><td>GND</td></tr>
<tr><td>25</td><td>$\overline{\text{RESET}}$</td><td>I</td><td>$\overline{\text{RESET}}$</td><td>Microcomputer reset input</td></tr>
<tr><td>26</td><td>XIN</td><td>I</td><td>XIN</td><td>Clock input (4MHz)</td></tr>
<tr><td>27</td><td>Xo</td><td>O</td><td>XOUT</td><td>Clock output (4MHz)</td></tr>
<tr><td>28</td><td>Φ</td><td>O</td><td>Φ</td><td>Not used (open)</td></tr>
<tr><td>29, 65</td><td>Vss</td><td></td><td>Vss</td><td>GND</td></tr>
<tr><td>30</td><td>P57</td><td>I</td><td>PW IN</td><td>POWER OFF detection input</td></tr>
<tr><td>31</td><td>P56</td><td>I</td><td>A STOP</td><td>Deck A STOP switch input</td></tr>
<tr><td>32</td><td>P55</td><td>I</td><td>$\overline{\text{A HALF}}$</td><td>Deck A Half switch input</td></tr>
<tr><td>33</td><td>P54</td><td>I</td><td>A SHUT</td><td>Deck A Reel table signal input</td></tr>
<tr><td>34</td><td>P53</td><td>I</td><td>A70 U</td><td>Deck A TYPE II switch input</td></tr>
<tr><td>35</td><td>P52</td><td>I</td><td>B STOP</td><td>Deck B STOP switch input</td></tr>
<tr><td>36</td><td>P51</td><td>I</td><td>B SHUT</td><td>Deck B Reel table signal input</td></tr>
<tr><td>37</td><td>P50</td><td>I</td><td>B70 U</td><td>Deck B TYPE II switch input</td></tr>
<tr><td>38</td><td>NC</td><td>—</td><td>——</td><td>——</td></tr>
<tr><td>39</td><td>P17</td><td>O</td><td>ARM 3</td><td>Deck A Reel Motor control out</td></tr>
<tr><td>40</td><td>P16</td><td>O</td><td>ARM 2</td><td>Deck A Reel Motor control out</td></tr>
</table>

Pin No.	Pin Name	I/O	Symbol	Description
41	P15	O	ARM 1	Deck A Reel Motor control out
42	P14	O	BRM 3	Deck B Reel Motor control out
43	P13	O	BRM 2	Deck B Reel Motor control out
44	P12	O	BRM 1	Deck B Reel Motor control out
45	P11	O	H/L	Capstan motor speed select
46	P10	O	A CM	A Capstan motor ON/OFF
47	P07	O	B CM	B Capstan motor ON/OFF
48	P06	I	BS/ASCH	Deck A Reel table/BS signal input
49	P05	I	A • P/BSCH	Deck B Reel table/A • P signal input
50	P04	O	A ◁	Deck A RVS LED output
51	P03	O	A ▷	Deck A FWD LED output
52	P02	O	A PLAY	Deck B RVS/FWD LED control output (Not Used)
53	P01	O	DUB H	High Speed Dubbing LED output
54	P00	O	DUB N	Normal Speed Dubbing LED output (Not Used)
55	NC	—	———	———
56	P27	O	CD SYNC	Auto CD Synchro LED output
57	P26	O	B ◁	Deck B RVS LED output
58	P25	O	B ▷	Deck B FWD LED output
59	O24	O	B PLAY	Deck B RVS/FWD LED control output (Not Used)
60	P23	O	B PAUSE	Deck B PAUSE LED output
61	P22	O	B ●	Auto CD Synchro LED output
62	P21	O	PASS	PASS amplifier switch output
63	P20	I	TEST	Electrical adjustment test mode setting
64	NC	—	———	———
66	NC	—	———	———
67	Vcc		Vcc	POWER 5 ± 0.5V
68	AVss		AVss	Analog system GND
69	VREF	I	VREF	Analog system reference voltage input
70	D • A		DAC	GND
71	PWM		———	GND
72	P63		———	GND

[TEST MODE]

When making pin (63) low (connect TP1 to ground with jumper wire), following function operates.

1. Sourec monitor
   Release the line mute while recording.

• IC361 MECHANISM CONTROLLER (M3747M4-220SP)

The Mechanism deck is controlled.

<table>
<tr><th>Pin No.</th><th>Pin Name</th><th>I/O</th><th>Description</th></tr>
<tr><td>1</td><td>$\overline{\text{TEST}}$</td><td>I</td><td>TEST mode selector terminal “H”: NORMAL MODE, “L”: TEST MODE</td></tr>
<tr><td>2</td><td>$\overline{\text{BIAS}}$</td><td>O</td><td>Bias osc terminal “L”: ON</td></tr>
<tr><td>3</td><td>SPEED H/L</td><td>O</td><td>NORMAL/HIGH selector for recording equalizer, “H”: HIGH, “L”: NORMAL</td></tr>
<tr><td>4</td><td>$\overline{\text{B REC}}$</td><td>O</td><td>LED drive terminal for B deck record mode “L”: LIGHT</td></tr>
<tr><td>5</td><td>$\overline{\text{DUB H}}$</td><td>O</td><td>LED drive terminal for HIGH SPEED DUBBING “L”: LIGHT</td></tr>
<tr><td>6</td><td>$\overline{\text{DUB N}}$</td><td>O</td><td>LED drive terminal for NORMAL SPEED DUBBING “L”: LIGHT (Not in used)</td></tr>
<tr><td>7</td><td>$\overline{\text{A PLAY}}$</td><td>O</td><td>LED drive terminal for A deck play mode “L”: LIGHT</td></tr>
<tr><td>8</td><td>$\overline{\text{B PLAY}}$</td><td>O</td><td>LED drive terminal for B deck play mode “L”: LIGHT</td></tr>
<tr><td>9</td><td>$\overline{\text{B PAUSE}}$</td><td>O</td><td>LED drive terminal for B deck pause mode “L”: LIGHT</td></tr>
<tr><td>10
11</td><td>KEY Y
KEY X</td><td>I</td><td>
<table>
<tr><td>KEY Y INPUT</td><td>STOP-B</td><td>PAUSE-B</td><td>PLAY-B</td><td>–</td><td>REW-A</td><td>FF-A</td></tr>
<tr><td>KEY X INPUT</td><td>STOP-A</td><td>PLAY-A</td><td>REW-B</td><td>FF-B</td><td>REC-B</td><td>DUB H</td></tr>
<tr><td>IC361 Pin ⑩, ⑪</td><td>0V</td><td>0.65V</td><td>1.35V</td><td>2.15V</td><td>2.84V</td><td>3.57V</td></tr>
</table>
</td></tr>
<tr><td>12</td><td>N.C.</td><td>–</td><td>Not in used (Open)</td></tr>
<tr><td>13</td><td>PW SW</td><td>I</td><td>POWER switch input terminal “H”: POWER ON (The equipment is fixed at “H”)</td></tr>
<tr><td>14</td><td>B SHUT</td><td>I</td><td>S-side reel rotation detection at DECK-B</td></tr>
<tr><td>15</td><td>A SHUT</td><td>I</td><td>S-side reel rotation detection at DECK-A</td></tr>
<tr><td>16</td><td>PW IN (AC)</td><td>I</td><td>Power in terminal “H”: POWER ON</td></tr>
<tr><td>17</td><td>$\overline{\text{PW HOLD}}$</td><td>O</td><td>Power holding output terminal “L”: POWER ON HOLDING (Not in used)</td></tr>
<tr><td>18</td><td>VREF</td><td>I</td><td>Reference voltage +5V</td></tr>
<tr><td>19</td><td>XI</td><td>I</td><td>Oscillation input terminal } (4MHz)</td></tr>
<tr><td>20</td><td>XO</td><td>O</td><td>Oscillation output terminal } (4MHz)</td></tr>
<tr><td>21</td><td>VSS</td><td>–</td><td>Ground terminal</td></tr>
<tr><td>22</td><td>VCC</td><td>–</td><td>+5V power supply terminal</td></tr>
<tr><td>23</td><td>$\overline{\text{B STOP SW}}$</td><td>I</td><td>Mechanism play mode switch input for DECK-B “H”: PLAY</td></tr>
<tr><td>24</td><td>$\overline{\text{A STOP SW}}$</td><td>I</td><td>Mechanism play mode switch input for DECK-A “H”: PLAY</td></tr>
<tr><td>25</td><td>RESET</td><td>I</td><td>RESET signal input terminal “L”: RESET</td></tr>
<tr><td>26</td><td>AU BUS IN</td><td>I</td><td>SIRCS signal input terminal</td></tr>
<tr><td>27</td><td>$\overline{\text{REC DT}}$</td><td>I</td><td>REC claw detection at DECK-B “L”: REC CLAW PROOF</td></tr>
<tr><td>28</td><td>$\overline{\text{B HALF}}$</td><td>I</td><td>Half pawl input for DECK-B “L”: AVAILABLE</td></tr>
<tr><td>29</td><td>$\overline{\text{A HALF}}$</td><td>I</td><td>Half pawl input for DECK-A “L”: AVAILABLE</td></tr>
<tr><td>30</td><td>CAP H/L</td><td>O</td><td>Tape speed selector “L”: HIGH SPEED, “H”: NORMAL SPEED</td></tr>
<tr><td>31</td><td>CAPM</td><td>O</td><td>Capstan motor ON/OFF switch “L”: ON</td></tr>
<tr><td>32</td><td>TRG H/L</td><td>O</td><td>Clamp voltage output terminal</td></tr>
<tr><td>33</td><td>B TRG</td><td>O</td><td>Trigger signal output for DECK-B</td></tr>
<tr><td>34</td><td>A TRG</td><td>O</td><td>Trigger signal output for DECK-A</td></tr>
<tr><td>35</td><td>AU BUS OUT</td><td>O</td><td>SIRCS signal output terminal</td></tr>
<tr><td>36</td><td>INH</td><td>O</td><td>Inhibit signal output terminal</td></tr>
<tr><td>37</td><td>PB A/B</td><td>O</td><td>DECK-A/DECK-B play selector, at DECK-B “H”: DECK-A, “L”: DECK-B</td></tr>
<tr><td>38</td><td>RELAY</td><td>O</td><td>Recording/play selector at DECK-B “H”: RECORDING</td></tr>
<tr><td>39</td><td>R/P</td><td>O</td><td>Recording/play selector for dolby (IC304) “H”: PLAY</td></tr>
<tr><td>40</td><td>$\overline{\text{R M}}$</td><td>O</td><td>Recording mute ON/OFF “L”: MUTE ON</td></tr>
<tr><td>41</td><td>$\overline{\text{L M}}$</td><td>O</td><td>Line mute ON/OFF “L”: MUTE ON</td></tr>
<tr><td>42</td><td>ER CHECK</td><td>O</td><td>Error check terminal “L”: Checked, “H”: Not Checked (Not in used)</td></tr>
</table>

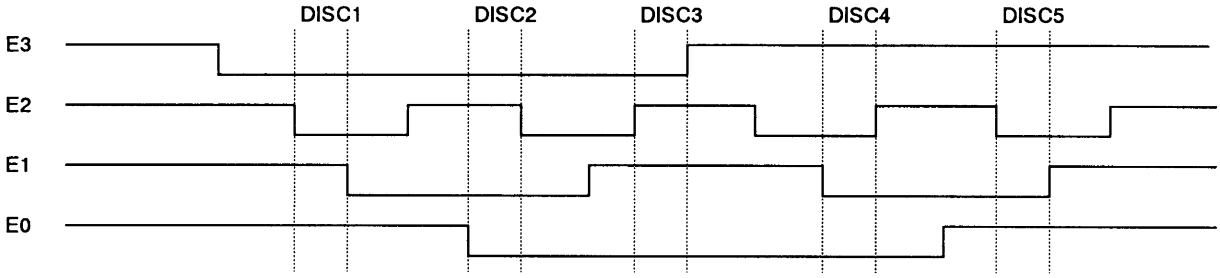
• IC450 CD MECHANISM CONTROLLER (µPD75516GF-461-3B9)

This IC carries out data communication with CXA1372AQ (RF signal processing and servo processing), CXD2500BQ (digital signal processing), MSM6538-01GS-VKR1 (digital filter) and µPD75517GF (CD master controller) of CD section to mainly control mechanism section.

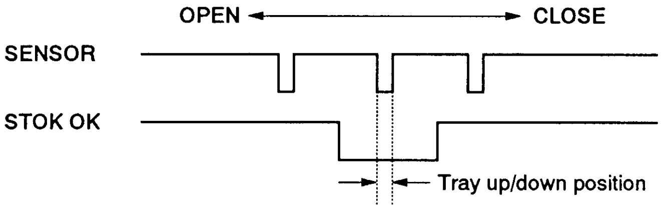
Pin No.	Pin Name	I/O	Function
1			OPEN
2	AVDD	–	+5V power supply
3	VDD	–	+5V power supply
4	VDD	–	+5V power supply
5	ENCODER E3	I	Stock position detecting decoder input 3 *1
6	ENCODER E2	I	Stock position detecting decoder input 2 *1
7	ENCODER E1	I	Stock position detecting decoder input 1 *1
8	ENCODER E0	I	Stock position detecting decoder input 0 *1
9	D7	I/O	Not used. (Connected to GND.)
10	D6	I/O	
11	D5	I/O	
12	D4	I/O	
13	D3	I/O	
14	D2	I/O	
15	D1	I/O	
16	D0	I/O	
17	GFS	I	GFS signal from digital signal processor (CXD2500BQ). "L": NG, "H": OK.
18	SENSE	I	SENS signal from digital signal processor (CXD2500BQ)
19	DOWN SW	I	Down input of up/down selector
20	UP SW	I	Up input of up/down selector
21	A11	O	Not used. (open)
22	A10	O	
23	A9	O	
24	A8	O	
25	49PIN SELECT	I	Pin-49 function switching. "L": stock in, "H": box up/down.
26	LD ON	O	Optical pickup block laser diode control. "H": ON, "L": OFF.
27	WE	O	Not used. (open)
28	A12	O	Not used. (open)
29	A7	O	
30	A6	O	
31	A5	O	
32	A4	O	
33	GND	–	GND
34	A3	O	Not used. (open)
35	A2	O	
36	A1	O	
37	A0	O	
38	QINT	O	Communication data reading request to CD master controller (µPD75517)
39	M/F	I	Signal that indicates kind of communication data from CD master controller (µPD75517). "H": mechanism command, "L": file command.
40	SACK	O	Communication answer code to CD master controller (µPD75517)

Pin No.	Pin Name	I/O	Function
41	MREQ	I	Communication data reading request from CD master controller (μPD75517). Master request.
42	CMD3	I/O	Communication data 3 to/from CD master controller (μPD75517)
43	CMD2	I/O	Communication data 2 to/from CD master controller (μPD75517)
44	CMD1	I/O	Communication data 1 to/from CD master controller (μPD75517)
45	CMD0	I/O	Communication data 0 to/from CD master controller (μPD75517)
46	CHIN	I	Tracking jump number counting from RF/servo IC (CXA1372AQ)
47	FOK	I	Focus OK signal from RF/servo IC (CXA1372AQ). "H": OK.
48	SCOR	I	Subcode SYNC S0+S1 detecting from digital signal processor (CXD2500BQ)
49	SENSER	I	Tray position (stock in) detecting *2
50	SUBQ	I	Subcode Q data from digital signal processor (CXD2500BQ)
51	GND	–	GND
52	SQCK	O	Subcode Q data reading clock to digital signal processor (CXD2500BQ)
53	ADJ	I	Test mode. Fixed at "H" ("L": test mode).
54	GND	–	GND
55	XT1	I	Not used. (Connected to GND.)
56	XT2	O	Not used. (open)
57	GND	–	GND
58	X1	I	Connected to system clock (4.19MHz) oscillator.
59	X2	O	
60	RESET	I	Reset from CD master controller (μPD75517). "L": reset.
61	D/F LATCH	O	Serial data latch to digital filter (CXD2554M-T6)
62	DSP LATCH	O	Serial data latch to digital signal processor (CXD2500BQ)
63	CLK	O	Serial clock to digital signal processor (CXD2500BQ) and digital filter (MSM6538-OIGS-VKR1)
64	DATA	O	Serial data to digital signal processor (CXD2500BQ) and digital filter (MSM6538-OIGS-VKR1)
65	DFCTSW	O	RF/Servo IC (CXA1372AQ) defect circuit ON/OFF control. "L": ON, "H": OFF. Disc defect detecting stops during focus search. (Set to "H".)
66	MUTE	O	CD audio mute. "H": mute.
67	CLAMP M3M	O	CLAMP motor control *3
68	CLAMP M3P	O	
69	UP/DOWN M2M	O	UP/DOWN motor control *4
70	UP/DOWN M2P	O	
71	LOADING M1M	O	Loading motor control *5
72	LOADING M1P	O	
73	A GND	–	GND
74	STOK OK	I	Tray position detecting. "L": stock up/down movable area *2
75	DISC SENS	I	Disc sensing. "H": with disc, "L": no disc.
76	DISC TABLE IN SW	I	Loading switch
77	DISC TABLE OUT SW	I	Unloading switch
78	TEST	I	Test mode. Fixed at "H" ("L": test mode).
79	AF ADJ	I	Test mode. Fixed at "H" ("L": test mode).
80			Not used. (open)

*1


DISC1
DISC2
DISC3
DISC4
DISC5
E3
E2
E1
E0

*2


OPEN
CLOSE
SENSOR
STOK OK
Tray up/down position

*3

	UP	DOWN	BRAKE
CLAMP M3P	H	L	H
CLAMP M3M	L	H	H

*4

	UP	DOWN	BRAKE
UP/DOWN M2P	H	L	H
UP/DOWN M2M	L	H	H

*5

	OUT	IN	BRAKE
LOADING M1P	H	L	H
LOADING M1M	L	H	H

• IC501 DISPLAY CONTROLLER (μPD78042-GF-033-3B9)

Pin No.	Pin Name	I/O	Function
1	8G	O	Fluorescent display driving
2	9G	O	
3	10G	O	
4	11G	O	
5	12G	O	
6	13G	O	
7	14G	O	
8	+5V	–	+5V power supply
9	CE	O	Chip select to tuner PLL IC (LC7218)
10	DATA.OUT	O	Serial data to tuner PLL IC (LC7218) and TONE controller (TC9184P)
11	CLOCK	O	Serial clock to tuner PLL IC (LC7218) and TONE controller (TC9184P)
12	DATA.IN	I	Serial data from tuner PLL IC (LC7218)
13	TUNED	I	Tuning discrimination from FM/AM IF amplifier (LA1831). "L": tuning.
14	STEREO	I	FM stereo discrimination from FM/AM IF amplifier (LA1831). "L": stereo.
15	LED CL	O	Reset to LED driver (M66342)
16	LED CE	O	Chip enable to LED driver (M66342)
17	RESET	I	Reset. "L": reset.
18	T.MUT	O	Tuner muting. "H": mute.
19	A.MUT	O	Audio muting. "L": mute.
20	GND	–	GND
21	VAR	I	Destination switching *1
22	12K	I	Spectrum analyzer (12KHz)
23	4K	I	Spectrum analyzer (4KHz)
24	1K	I	Spectrum analyzer (1KHz)
25	400	I	Spectrum analyzer (400Hz)
26	100	I	Spectrum analyzer (100Hz)
27	KEY.IN	I	Key input *2
28	KEY.IN	I	
29	AV	–	+5V power supply
30	AV.REF	–	+5V power supply
31	XT1	I	Subsystem clock (32.768KHz). Connected to crystal oscillator.
32	XT2	O	
33	GND	–	GND
34	X1	I	System clock (32.768KHz). Connected to crystal oscillator.
35	X2	O	
36	TONE/LED DATA	O	Serial data to LED driver (M66342P)
37	TONE/LED CLOCK	O	Serial clock to LED driver (M66342P)
38	TONE/LED CE	O	Chip enable to TONE controller (TC9184P)
39	AU.B-OUT	O	Audio bus
40	CD.DATA D3	I	Display data 3 from CD controller (μPD75517)
41	CD.DATA D2	I	Display data 2 from CD controller (μPD75517)
42	CD.DATA D1	I	Display data 1 from CD controller (μPD75517)
43	CD.DATA D0	I	Display data 0 from CD controller (μPD75517)
44	CD.DPCLK	I	Serial clock from CD controller (μPD75517)
45	AMP CLOCK	O	Serial clock to serial IN/parallel OUT (M50253P)

Pin No.	Pin Name	I/O	Function
46	AMP DATA	O	Serial data to serial IN/parallel OUT (M50253P)
47	STOP	I	Power failure detecting (M51953BPF)
48	GND	–	GND
49	AU.B-IN	I	Audio bus
50	SIRCS.IN	I	Infrared remote commander signal
51	POWER	O	Power ON/OFF control. "L": power supply ON.
52	+5V	–	+5V power supply
53	P19	O	Fluorescent display driving
54	P20	O	
55	P18	O	
56	P17	O	
57	P9	O	
58	P10	O	
59	P11	O	
60	P12	O	
61	P13	O	
62	P14	O	
63	P15	O	
64	P16	O	
65	P1	O	
66	P2	O	
67	P3	O	
68	P4	O	
69	P5	O	
70	P6	O	
71	–27V	–	–27V power supply for driving fluorescent display
72	P7	O	Fluorescent display driving
73	P8	O	
74	1G	O	
75	2G	O	
76	3G	O	
77	4G	O	
78	5G	O	
79	6G	O	
80	7G	O	

*1

Voltage (Vdc)	0.6	1.3	2.0	2.6	3.1	3.7
Destination	AUS EA SP E	UK AEP	CAD U	IT	EE	G

AUS : Australian model
EA : Saudi Arabia model
SP : Singapore model
CND : Canadian model
IT : Italian model
EE : East European model
G : German model

*2

Voltage (Vdc)	0.0	0.3	0.6	0.9	1.2	1.5	1.9	2.2	2.5	5.0
Pin ㉗	POWER	TUNER	CD	TAPE	VIDEO	REC				No input
Pin ㉘	KARAOKE	DISPLAY	TIMER	MEMORY/ NEXT	STEREO/ MONO	MODE	BAND	–	+	No input

• IC601 CD MASTER CONTROLLER (μPD75517-GF-209-3B9)

Pin No.	Pin Name	I/O	Function
1	KEY0	I	Key input 0 *1
2	VDD	–	+5V power supply
3		–	Connected to +5V.
4		–	Connected to +5V.
5			Open
6			Open
7	ON/OFF	O	CD player power supply ON/OFF. "H": ON.
8	MD RESET	O	CD mechanism controller (μPD75516GF) resetting. "L": reset
9	CD.DPCLK	O	Clock for transferring display data to display controller (μPD78042GF)
10			Open
11	AUBUS OUT	O	Audio bus
12	MREQ	O	Communication data reading request to CD mechanism controller (μPD75516GF). Master request.
13	AUBUS/SIRCS	I	Audio bus/SIRCS switching. Connected to +5V.
14	TEST	I	Fixed at "H". ("L": Accident code appears when power ON.)
15	SUF.REP	I	Fixed at "H". ("L": All discs repeat shuffle.)
16	D.SKIP	I	Fixed at +2.5V.
17			Connected to +5V.
18			
19			
20			
21			
22			
23			
24	SACK	I	Communication answer code from CD mechanism controller (μPD75516GF)
25			Open
26			
27			
28			
29	P53		Open
30	P52		
31	P51		
32	DISC-5	O	Disc 5 LED driving. "H": lighting.
33	VSS		GND
34	DISC-4	O	Disc 4 LED driving. "H": Lighting.
35	DISC-3	O	Disc 3 LED driving. "H": Lighting.
36	DISC-2	O	Disc 2 LED driving. "H": Lighting.
37	DISC-1	O	Disc 1 LED driving. "H": Lighting.
38			Open
39			
40			
41	M/F	O	Signal that indicates the kind of communication data to CD mechanism controller (μPD75516GF). "H": mechanism command, "L": file command.
42	CD.DATA D3	O	Display data 3 to display controller (μPD78042GF)
43	CD.DATA D2	O	Display data 2 to display controller (μPD78042GF)
44	CD.DATA D1	O	Display data 1 to display controller (μPD78042GF)
45	CD.DATA D0	O	Display data 0 to display controller (μPD78042GF)

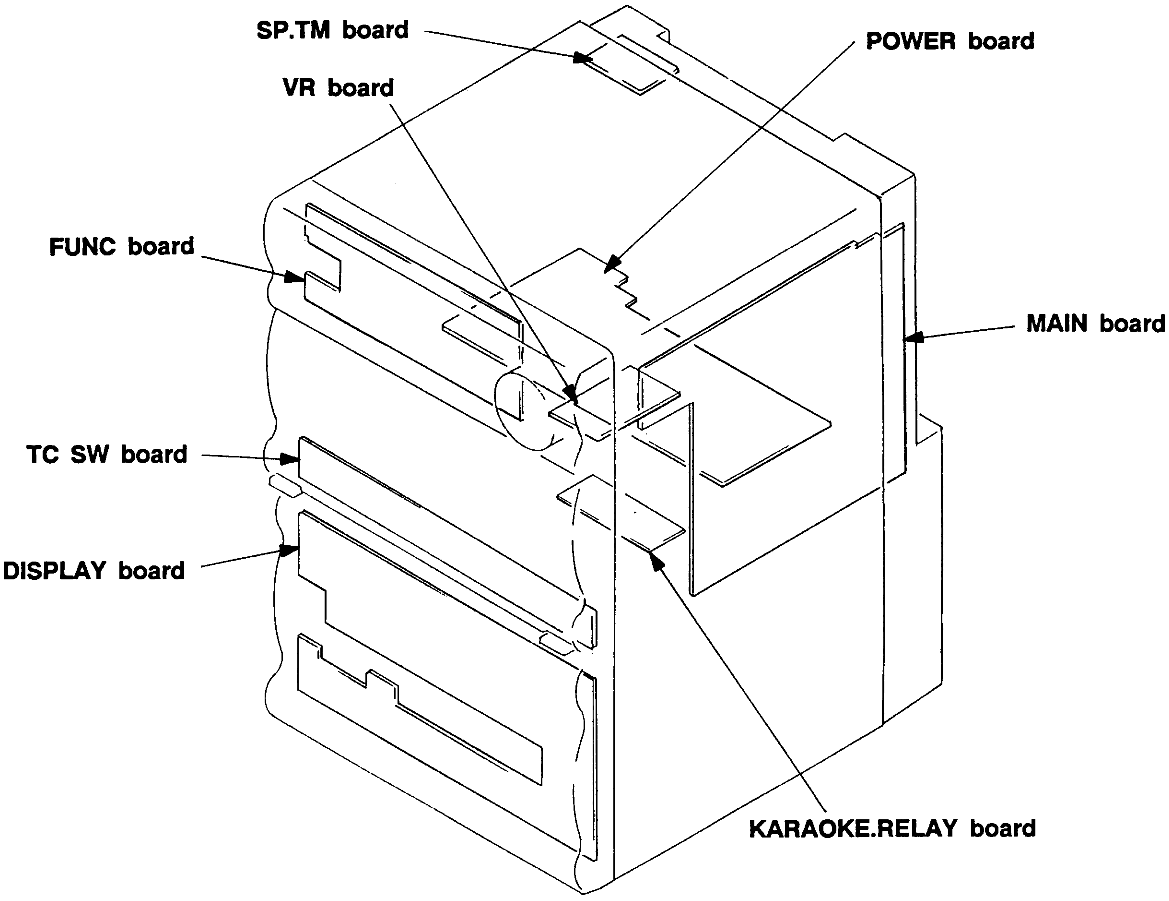
Pin No.	Pin Name	I/O	Function
46			Connected to GND.
47			
48	QINT	I	Communication data reading request (interruption request) from CD mechanism controller (μPD75516GF).
49	AUBUS IN	I	Audio bus
50			Connected to +5V.
51			
52			
53			Connected to GND.
54	VSS	–	GND
55	XTI	I	Connected to GND.
56	XT2	O	Open
57	IC		Connected to GND.
58	X1	I	Connected to system clock (4.19MHz) oscillator.
59	X2	O	
60	RESET	I	Reset. "L": reset.
61			Open
62			
63			
64			
65			
66			
67	P131	O	Orange LED (disc 1 to disc 5) driving. "L": Lighting.
68	P130	O	Green LED (disc 1 to disc 5) driving. "L": Lighting.
69	CMD3	I/O	Communication data 3 to/from CD mechanism controller (μPD75516GF)
70	CMD2	I/O	Communication data 2 to/from CD mechanism controller (μPD75516GF)
71	CMD1	I/O	Communication data 1 to/from CD mechanism controller (μPD75516GF)
72	CMD0	I/O	Communication data 0 to/from CD mechanism controller (μPD75516GF)
73	AVSS	–	GND
74			Connected to GND.
75			
76			
77			
78	KEY3	I	Not used. (Connected to +5V.)
79	KEY2	I	Key input 2 *1
80	KEY1	I	Key input 1 *1

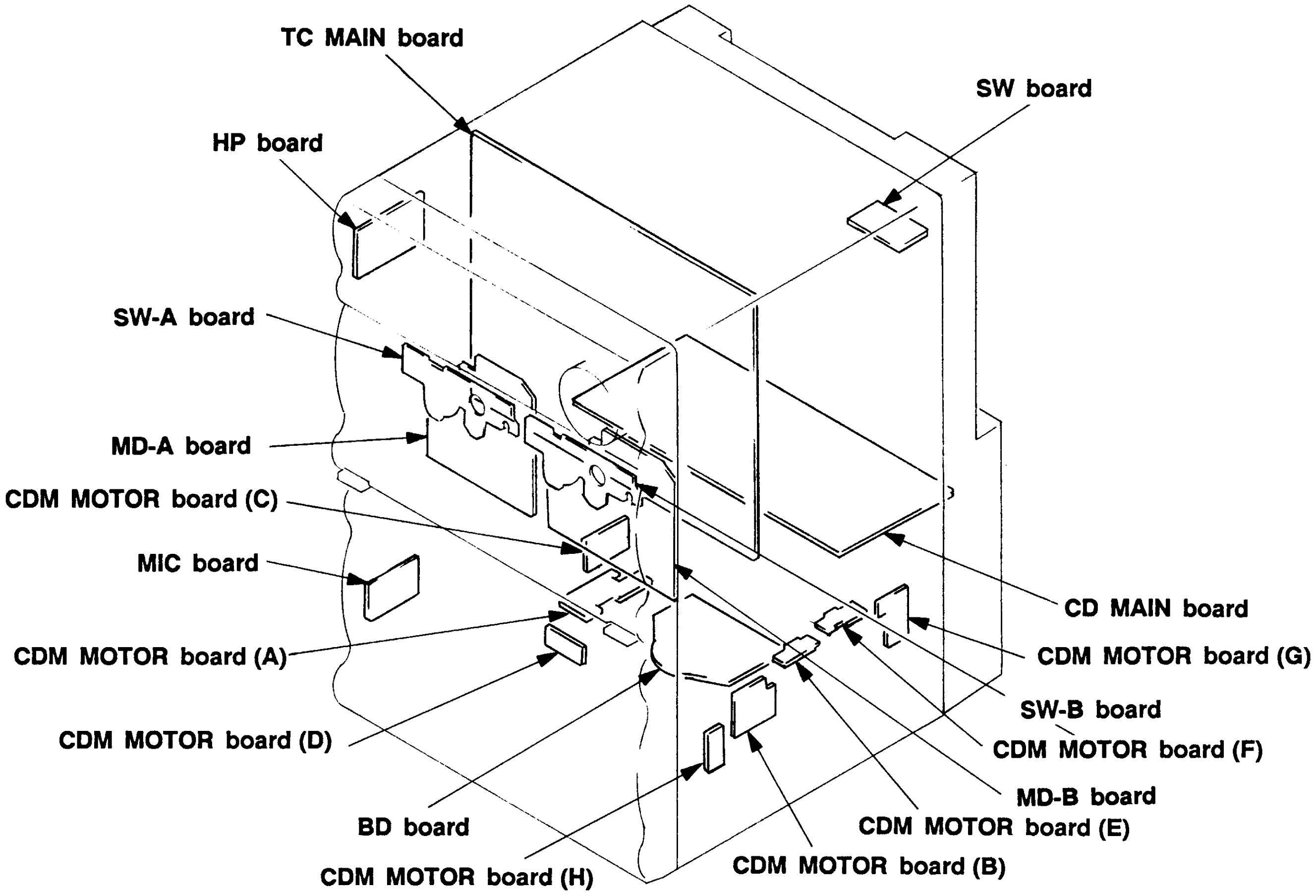
*1

Voltage (Vdc)	0.0	0.6	1.3	2.0	2.6	3.2	3.8	4.4	5.0
KEY0	PLAY	PAUSE	STOP	EJECT-1	EJECT-2	EJECT-3	EJECT-4	EJECT-5	No input
KEY1	▷▷|/▷▷	EDIT	DISC-1	DISC-2	DISC-3	DISC-4	DISC-5		No input
KEY2	|◁◁/◁◁	M.SCAN	REPEAT	PROGRAM	SHUFFLE	CONTINUE	CLEAR	CHECK	No input

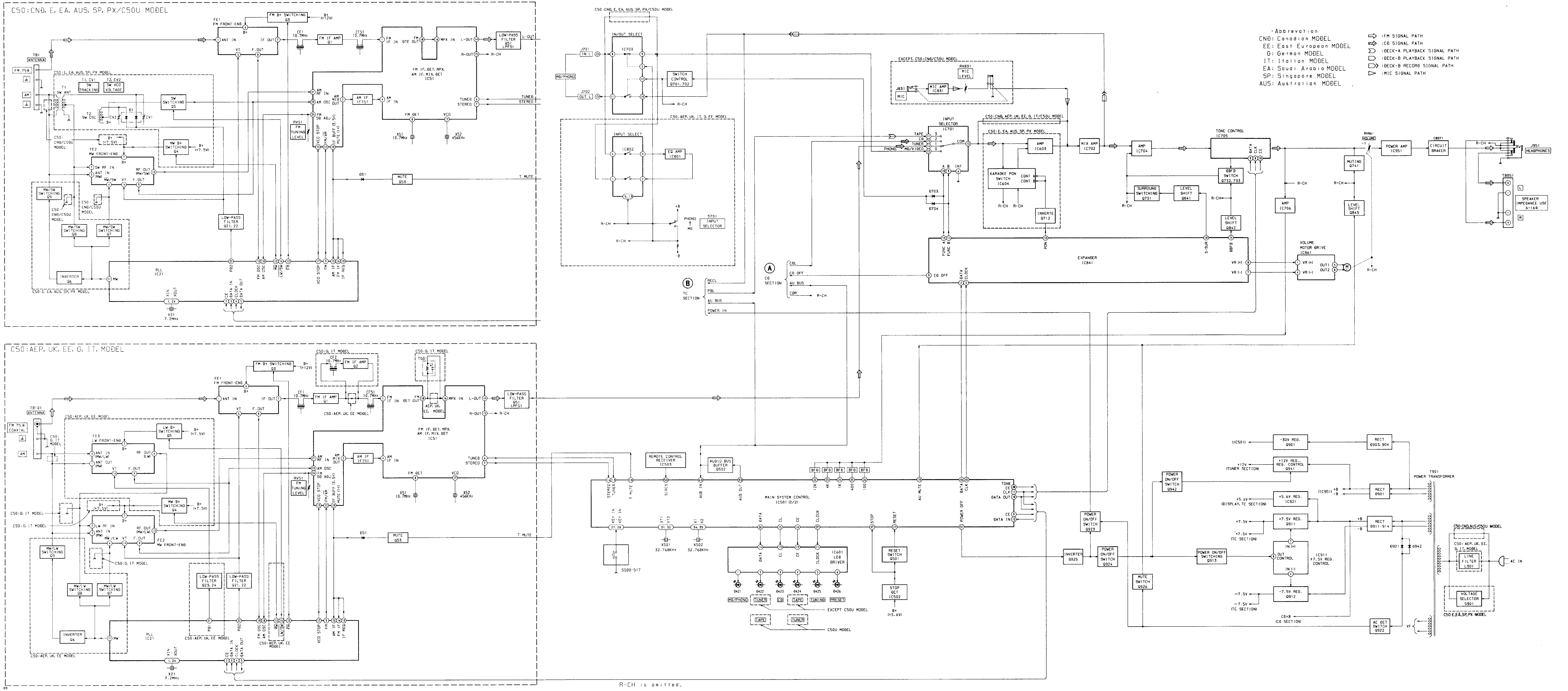
SECTION 7
DIAGRAMS

7-1. CIRCUIT BOARDS LOCATION


SP.TM board
VR board
POWER board
FUNC board
MAIN board
TC SW board
DISPLAY board
KARAOKE.RELAY board

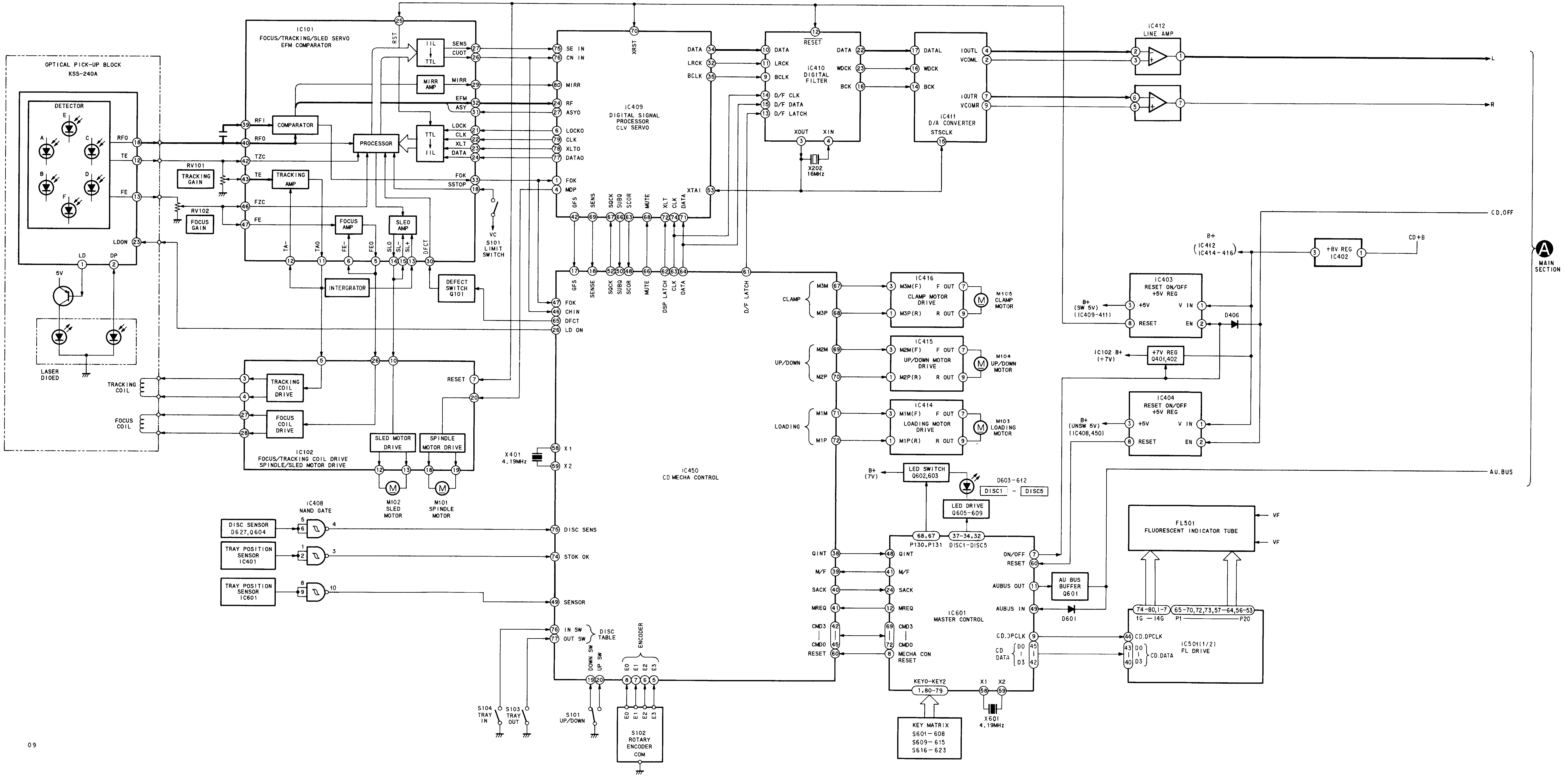

TC MAIN board
SW board
HP board
SW-A board
MD-A board
CDM MOTOR board (C)
MIC board
CD MAIN board
CDM MOTOR board (A)
CDM MOTOR board (G)
CDM MOTOR board (D)
SW-B board
CDM MOTOR board (F)
MD-B board
BD board
CDM MOTOR board (E)
CDM MOTOR board (H)
CDM MOTOR board (B)

7-2. BLOCK DIAGRAM —MAIN SECTION—

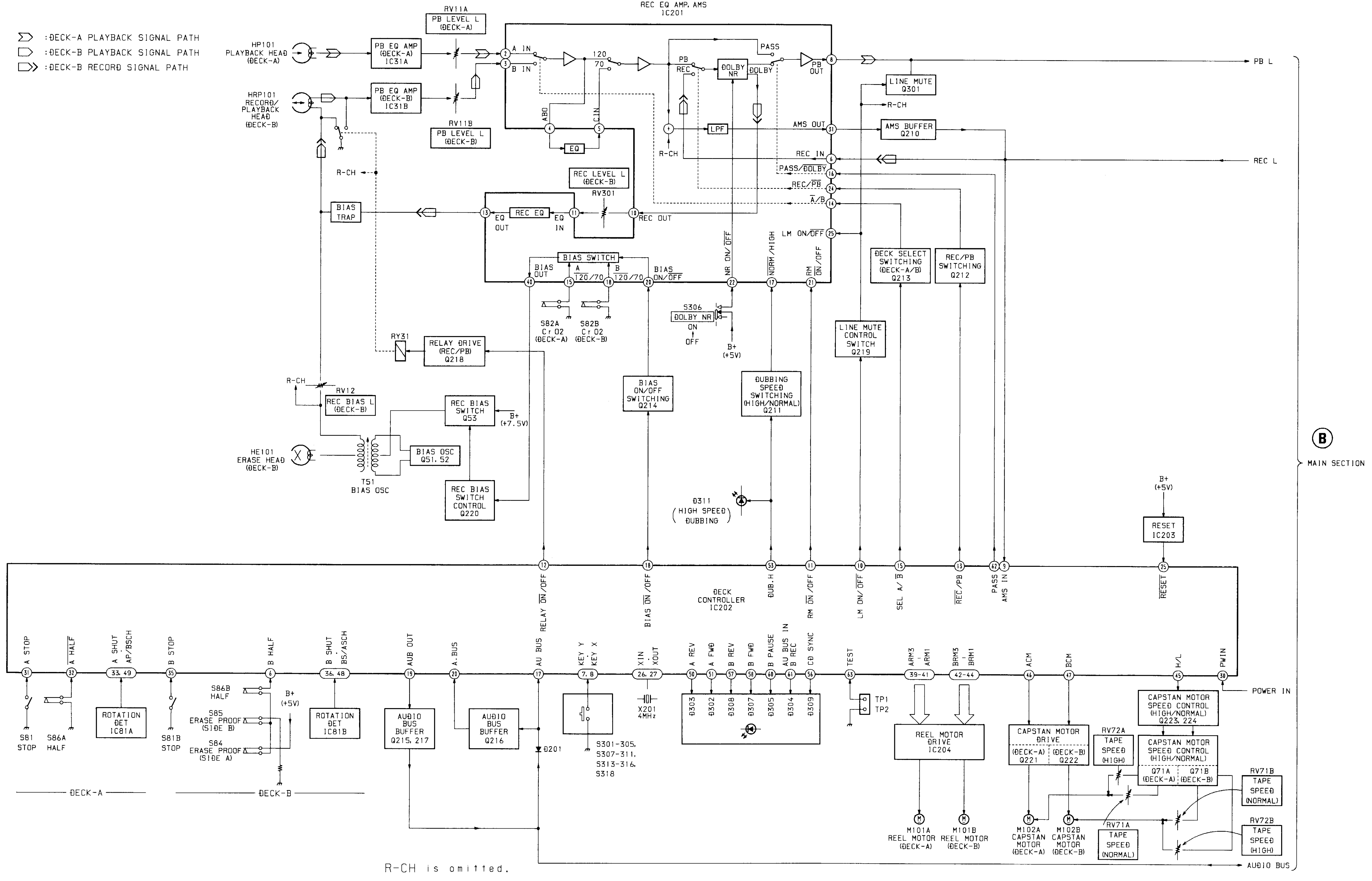

C50:CND, E, EA, AUS, SP, PX/C50U MODEL
C50:AEP, UK, EE, G, IT, MODEL
FM FRONT-END
FM B+ SWITCHING Q3
FM IF AMP Q1
FM IF, DET, MPX, AM IF, MIX, DET IC51
LOW-PASS FILTER Q51 LPF51
PLL IC21
MUTE Q53
INVERTER Q6
MW FRONT-END
LW FRONT-END
IN/OUT SELECT IC703
INPUT SELECT IC802
EQ AMP IC801
INPUT SELECTOR IC701
MIC AMP IC851
MIX AMP IC702
AMP IC704
TONE CONTROL IC705
POWER AMP IC951
CIRCUIT BRAKER
HEADPHONES
SPEAKER IMPEDANCE USE 6-16Ω
EXPANDER IC841
VOLUME MOTOR DRIVE IC861
REMOTE CONTROL RECEIVER IC503
AUDIO BUS BUFFER Q502
MAIN SYSTEM CONTROL IC501 (2/2)
LED DRIVER IC601
RESET SWITCH Q501
STOP DET IC502
POWER TRANSFORMER T901
LINE FILTER L901
VOLTAGE SELECTOR S901
AC IN
CD SECTION
TC SECTION
·Abbrevation
CND: Canadian MODEL
EE: East European MODEL
G: German MODEL
IT: Italian MODEL
EA: Saudi Arabia MODEL
SP: Singapore MODEL
AUS: Australian MODEL
:FM SIGNAL PATH
:CD SIGNAL PATH
:DECK-A PLAYBACK SIGNAL PATH
:DECK-B PLAYBACK SIGNAL PATH
:DECK-B RECORD SIGNAL PATH
:MIC SIGNAL PATH

R-CH is omitted.

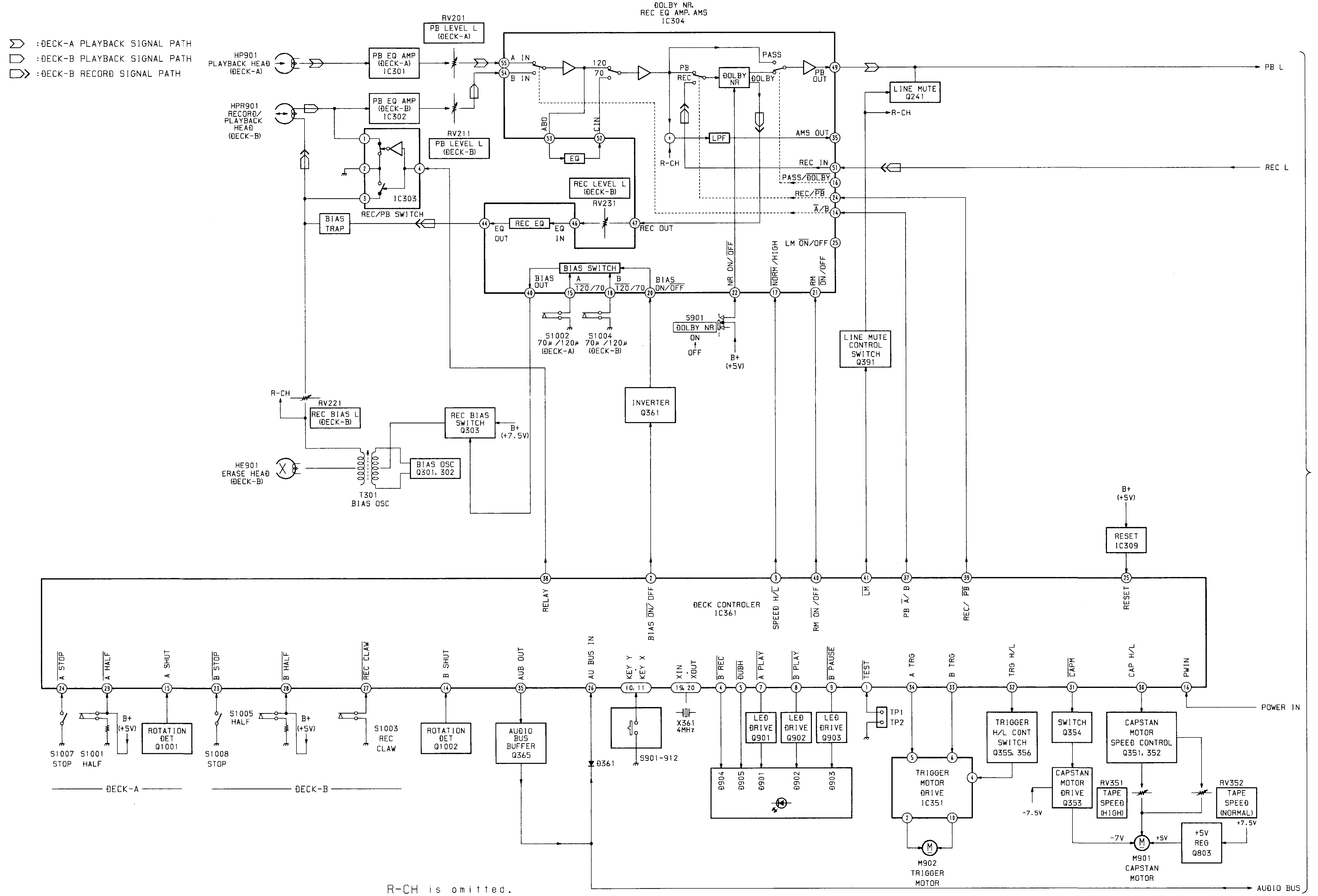
7-3. BLOCK DIAGRAM —CD/DISPLAY SECTION—


OPTICAL PICK-UP BLOCK
KSS-240A
DETECTOR
RFO
TE
FE
LDON
LD
DP
5V
LASER DIOED
TRACKING COIL
FOCUS COIL
RV101
TRACKING GAIN
RV102
FOCUS GAIN
IC101
FOCUS/TRACKING/SLED SERVO
EFM COMPARATOR
COMPARATOR
PROCESSOR
TRACKING AMP
FOCUS AMP
SLED AMP
MIRR AMP
TTL
IIL
SENS
CUOT
MIRR
EFM
ASY
LOCK
CLK
XLT
DATA
FOK
SSTOP
RFI
TZC
FZC
INTERGRATOR
DEFECT SWITCH
Q101
S101
LIMIT SWITCH
IC102
FOCUS/TRACKING COIL DRIVE
SPINDLE/SLED MOTOR DRIVE
TRACKING COIL DRIVE
FOCUS COIL DRIVE
SLED MOTOR DRIVE
SPINDLE MOTOR DRIVE
RESET
M102
SLED MOTOR
M101
SPINDLE MOTOR
IC409
DIGITAL SIGNAL PROCESSOR
CLV SERVO
SE IN
CN IN
MIRR
RF
ASYO
LOCKO
CLK
XLTO
DATAO
FOK
MDP
XRST
XTAI
GFS
SENS
SQCK
SUBQ
SCOR
MUTE
XLT
CLK
DATA
IC410
DIGITAL FILTER
DATA
LRCK
BCLK
D/F CLK
D/F DATA
D/F LATCH
WDCK
BCK
XOUT
XIN
X202
16MHz
RESET
IC411
D/A CONVERTER
DATAL
IOUTL
VCOML
IOUTR
VCOMR
STSCLK
IC412
LINE AMP
L
R
CD.OFF
AU.BUS
A
MAIN SECTION
B+
IC412
IC414-416
+8V REG
IC402
CD+B
IC403
RESET ON/OFF
+5V REG
B+
(SW 5V)
(IC409-411)
+5V
V IN
RESET
EN
D406
IC102 B+
(+7V)
+7V REG
Q401,402
IC404
RESET ON/OFF
+5V REG
B+
(UNSW 5V)
(IC408,450)
IC450
CD MECHA CONTROL
X401
4.19MHz
X1
X2
FOK
CHIN
DFCT
LD ON
DSP LATCH
D/F LATCH
CLAMP
M3M
M3P
IC416
M3M(F)
M3P(R)
F OUT
R OUT
CLAMP MOTOR DRIVE
M105
CLAMP MOTOR
UP/DOWN
M2M
M2P
IC415
M2M(F)
M2P(R)
UP/DOWN MOTOR DRIVE
M104
UP/DOWN MOTOR
LOADING
M1M
M1P
IC414
M1M(F)
M1P(R)
LOADING MOTOR DRIVE
M103
LOADING MOTOR
IC408
NAND GATE
DISC SENSOR
D627,Q604
TRAY POSITION SENSOR
IC401
TRAY POSITION SENSOR
IC601
DISC SENS
STOK OK
SENSOR
IN SW
OUT SW
DISC TABLE
S104
TRAY IN
S103
TRAY OUT
S101
UP/DOWN
DOWN SW
UP SW
ENCODER
E0
E1
E2
E3
S102
ROTARY ENCODER
COM
B+
(7V)
LED SWITCH
Q602,603
D603-612
DISC1 - DISC5
LED DRIVE
Q605-609
68,67
37-34,32
P130,P131
DISC1-DISC5
QINT
M/F
SACK
MREQ
CMD3
CMDO
RESET
IC601
MASTER CONTROL
MECHA CON RESET
ON/OFF
RESET
AUBUS OUT
AUBUS IN
AU BUS BUFFER
Q601
D601
CD.DPCLK
CD DATA
D0
D3
KEY0-KEY2
1,80-79
KEY MATRIX
S601-608
S609-615
S616-623
X601
4.19MHz
FL501
FLUORESCENT INDICATOR TUBE
VF
74-80,1-7
1G - 14G
65-70,72,73,57-64,56-53
P1 - P20
IC501(1/2)
FL DRIVE
CD.DPCLK
CD.DATA

7-4. BLOCK DIAGRAM —DECK (HCD-C50) SECTION —


⊐> :DECK-A PLAYBACK SIGNAL PATH
⊐ :DECK-B PLAYBACK SIGNAL PATH
⊐>> :DECK-B RECORD SIGNAL PATH
HP101 PLAYBACK HEAD (DECK-A)
HRP101 RECORD/PLAYBACK HEAD (DECK-B)
PB EQ AMP (DECK-A) IC31A
PB EQ AMP (DECK-B) IC31B
RV11A PB LEVEL L (DECK-A)
RV11B PB LEVEL L (DECK-B)
DOLBY NR, REC EQ AMP, AMS IC201
A IN
B IN
120
70
PB
REC
DOLBY NR
DOLBY
PASS
PB OUT
ABO
CIN
EQ
LPF
R-CH
AMS OUT
REC IN
PASS/DOLBY
REC/PB
A/B
LM ON/OFF
REC OUT
REC LEVEL L (DECK-B)
RV301
REC EQ
EQ OUT
EQ IN
BIAS TRAP
BIAS SWITCH
BIAS OUT
A 120/70
B 120/70
BIAS ON/OFF
NR ON/OFF
NORM/HIGH
RM ON/OFF
S82A Cr O2 (DECK-A)
S82B Cr O2 (DECK-B)
S306 DOLBY NR ON ↑ OFF
B+ (+5V)
RY31
RELAY DRIVE (REC/PB) Q218
RV12 REC BIAS L (DECK-B)
REC BIAS SWITCH Q53
B+ (+7.5V)
HE101 ERASE HEAD (DECK-B)
BIAS OSC Q51, 52
T51 BIAS OSC
REC BIAS SWITCH CONTROL Q220
BIAS ON/OFF SWITCHING Q214
DUBBING SPEED SWITCHING (HIGH/NORMAL) Q211
D311 (HIGH SPEED DUBBING)
LINE MUTE Q301
AMS BUFFER Q210
LINE MUTE CONTROL SWITCH Q219
DECK SELECT SWITCHING (DECK-A/B) Q213
REC/PB SWITCHING Q212
PB L
REC L
B MAIN SECTION
B+ (+5V)
RESET IC203
DECK CONTROLLER IC202
RELAY ON/OFF
BIAS ON/OFF
DUB.H
RM ON/OFF
LM ON/OFF
SEL A/B
REC/PB
PASS
AMS IN
RESET
A STOP
A HALF
A SHUT · AP/BSCH
B STOP
B HALF
B SHUT · BS/ASCH
AUB OUT
A.BUS
AU BUS
KEY Y · KEY X
XIN · XOUT
A REV
A FWD
B REV
B FWD
B PAUSE
AU BUS IN B REC
CD SYNC
TEST
ARM3 - ARM1
BRM3 - BRM1
ACM
BCM
H/L
PWIN
POWER IN
S81 STOP
S86A HALF
ROTATION DET IC81A
S81B STOP
S86B HALF
S85 ERASE PROOF (SIDE B)
S84 ERASE PROOF (SIDE A)
ROTATION DET IC81B
AUDIO BUS BUFFER Q215, 217
AUDIO BUS BUFFER Q216
D201
S301-305, S307-311, S313-316, S318
X201 4MHz
D303
D302
D308
D307
D305
D304
D309
TP1
TP2
REEL MOTOR DRIVE IC204
M101A REEL MOTOR (DECK-A)
M101B REEL MOTOR (DECK-B)
CAPSTAN MOTOR DRIVE (DECK-A) Q221 (DECK-B) Q222
M102A CAPSTAN MOTOR (DECK-A)
M102B CAPSTAN MOTOR (DECK-B)
RV72A TAPE SPEED (HIGH)
RV71A TAPE SPEED (NORMAL)
CAPSTAN MOTOR SPEED CONTROL (HIGH/NORMAL) Q223, 224
CAPSTAN MOTOR SPEED CONTROL (HIGH/NORMAL) Q71A (DECK-A) Q71B (DECK-B)
RV71B TAPE SPEED (NORMAL)
RV72B TAPE SPEED (HIGH)
AUDIO BUS
DECK-A
DECK-B
R-CH is omitted.

7-5. BLOCK DIAGRAM —DECK (HCD-C50U) SECTION —


⊐> :DECK-A PLAYBACK SIGNAL PATH
⊐ :DECK-B PLAYBACK SIGNAL PATH
⊐>> :DECK-B RECORD SIGNAL PATH
HP901 PLAYBACK HEAD (DECK-A)
HPR901 RECORD/PLAYBACK HEAD (DECK-B)
PB EQ AMP (DECK-A) IC301
PB EQ AMP (DECK-B) IC302
RV201 PB LEVEL L (DECK-A)
RV211 PB LEVEL L (DECK-B)
IC303
REC/PB SWITCH
DOLBY NR, REC EQ AMP, AMS IC304
A IN
B IN
120
70
PB
REC
DOLBY NR
DOLBY
PASS
PB OUT
ABO
CIN
EQ
LPF
R-CH
AMS OUT
REC IN
PASS/DOLBY
REC/PB
A/B
LM ON/OFF
REC OUT
REC LEVEL L (DECK-B)
RV231
REC EQ
EQ OUT
EQ IN
BIAS TRAP
BIAS SWITCH
BIAS OUT
A 120/70
B 120/70
BIAS ON/OFF
NR ON/OFF
NORM/HIGH
RM ON/OFF
S1002 70µ/120µ (DECK-A)
S1004 70µ/120µ (DECK-B)
S901 DOLBY NR ON ↑ OFF
B+ (+5V)
RV221 REC BIAS L (DECK-B)
REC BIAS SWITCH Q303
B+ (+7.5V)
HE901 ERASE HEAD (DECK-B)
BIAS OSC Q301, 302
T301 BIAS OSC
INVERTER Q361
LINE MUTE Q241
LINE MUTE CONTROL SWITCH Q391
PB L
REC L
B MAIN SECTION
B+ (+5V)
RESET IC309
DECK CONTROLER IC361
RELAY
BIAS ON/OFF
SPEED H/L
RM ON/OFF
LM
PB A/B
REC/PB
RESET
A STOP
A HALF
A SHUT
B STOP
B HALF
REC CLAW
B SHUT
AUB OUT
AU BUS IN
KEY Y · KEY X
XIN · XOUT
B REC
DUBH
A PLAY
B PLAY
B PAUSE
TEST
A TRG
B TRG
TRG H/L
CAPM
CAP H/L
PWIN
POWER IN
S1007 STOP
S1001 HALF
ROTATION DET Q1001
S1008 STOP
S1005 HALF
S1003 REC CLAW
ROTATION DET Q1002
AUDIO BUS BUFFER Q365
D361
S901-912
X361 4MHz
LED DRIVE Q901
LED DRIVE Q902
LED DRIVE Q903
D904
D905
D901
D902
D903
TP1
TP2
TRIGGER MOTOR DRIVE IC351
M902 TRIGGER MOTOR
TRIGGER H/L CONT SWITCH Q355, 356
SWITCH Q354
CAPSTAN MOTOR DRIVE Q353
-7.5V
RV351 TAPE SPEED (HIGH)
CAPSTAN MOTOR SPEED CONTROL Q351, 352
RV352 TAPE SPEED (NORMAL)
+7.5V
+5V REG Q803
-7V
+5V
M901 CAPSTAN MOTOR
AUDIO BUS
DECK-A
DECK-B
R-CH is omitted.

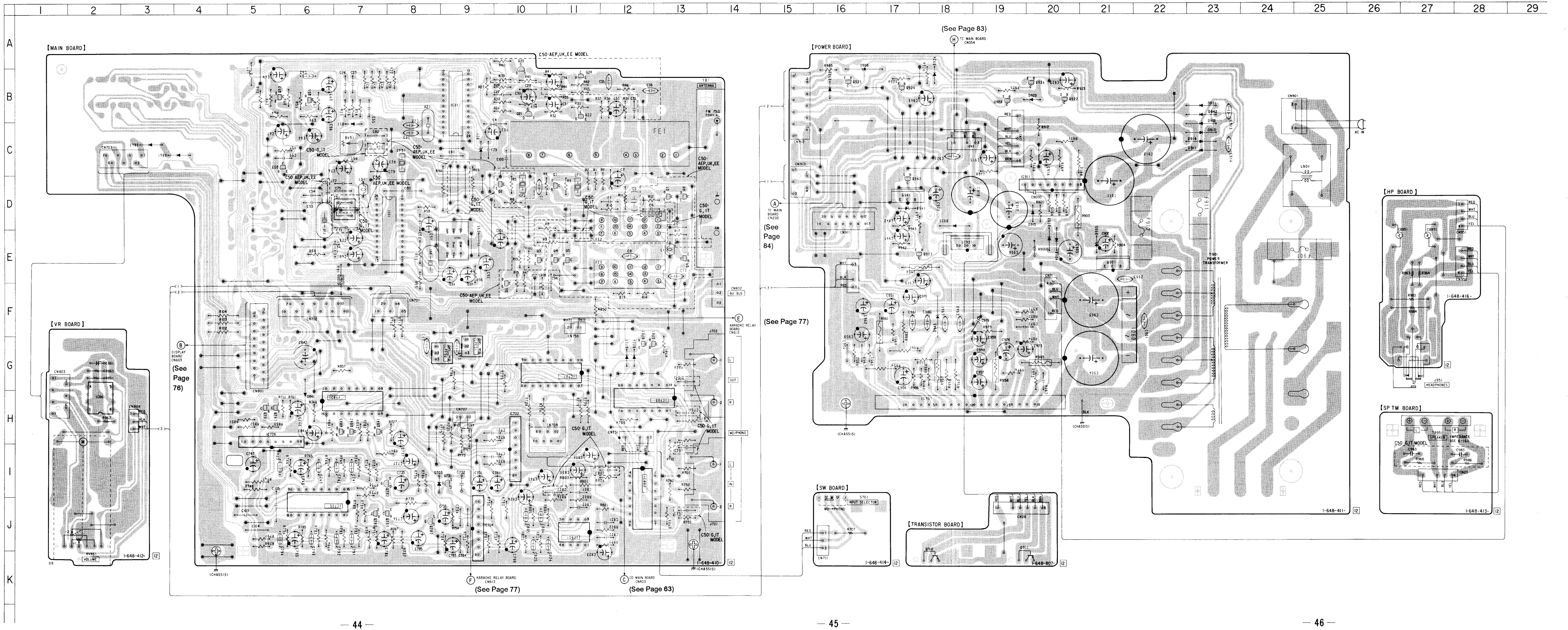
7-6. PRINTED WIRING BOARD

• MAIN SECTION (HCD-C50 : AEP, UK, G, IT, EE)

• See page 32 for Circuit Boards Location and see page 97, 98 for Semiconductor Lead Layouts.

• Semiconductor Location

Ref. No.	Location	Ref. No.	Location
D21	C-9	Q1	D-11
D51	C-7	Q2	D-10
D703	G-12	Q3	E-11
D704	G-12	Q4	E-11
D705	I-9	Q5	E-11
D841	H-6	Q6	F-10
D861	C-4	Q7	D-13
D862	C-3	Q8	D-13
D901	G-22	Q9	E-13
D903	E-20	Q21	B-10
D904	E-20	Q22	C-11
D905	E-21	Q23	A-10
D906	B-16	Q24	B-11
D911	C-23	Q51	B-6
D912	C-23	Q52	B-6
D913	C-23	Q53	C-5
D914	C-23	Q701	G-13
D915	D-20	Q702	G-13
D920	E-18	Q731	I-9
D921	B-21	Q732	J-8
D922	B-16	Q733	J-8
D923	B-20	Q741	H-5
D924	A-18	Q782	J-8
D941	D-17	Q783	J-7
D942	B-23	Q791	H-5
D943	G-18	Q841	H-8
		Q842	H-7
IC21	B-9	Q843	H-7
IC51	D-8	Q901	E-21
IC701	G-11	Q911	K-20
IC702	I-11	Q912	K-18
IC703	H-14	Q913	E-18
IC704	J-9	Q922	B-20
IC705	J-7	Q923	B-19
IC706	I-6	Q924	B-17
IC801	J-11	Q925	B-16
IC802	J-13	Q926	B-20
IC841	H-7	Q941	D-17
IC861	H-2	Q942	C-17
IC911	D-20		
IC921	E-18		
IC951	H-19		


1
2
3
4
5
6
7
8
9
10
11
12
13
14
15
16
17
18
19
20
21
22
23
24
25
26
27
28
29
A
B
C
D
E
F
G
H
I
J
K
[MAIN BOARD]
C50:AEP,UK,EE MODEL
C50 G,IT MODEL
C50 AEP,UK,EE MODEL
FE1
ANTENNA
[VR BOARD]
VOLUME
1-648-412-
(12)
B DISPLAY BOARD CN603
(See Page 78)
E KARAOKE RELAY BOARD CN8
F KARAOKE RELAY BOARD
(See Page 77)
C CD MAIN BOARD CN403
(See Page 63)
CN802 AV BUS
(See Page 77)
A TC MAIN BOARD CN200
(See Page 84)
(See Page 83)
H TC MAIN BOARD CN354
MICROPHONE
OUT
IN
L
R
1-648-410-
(12)
(CHASSIS)
[POWER BOARD]
T901 POWER TRANSFORMER
AC IN
CN901
L901
1-648-411-
(12)
[SW BOARD]
INPUT SELECTOR
1-648-414-
(12)
[TRANSISTOR BOARD]
1-648-807-
(12)
[HP BOARD]
J951 HEADPHONES
1-648-416-
(12)
[SP TM BOARD]
C50 G,IT MODEL
1-648-413-
(12)

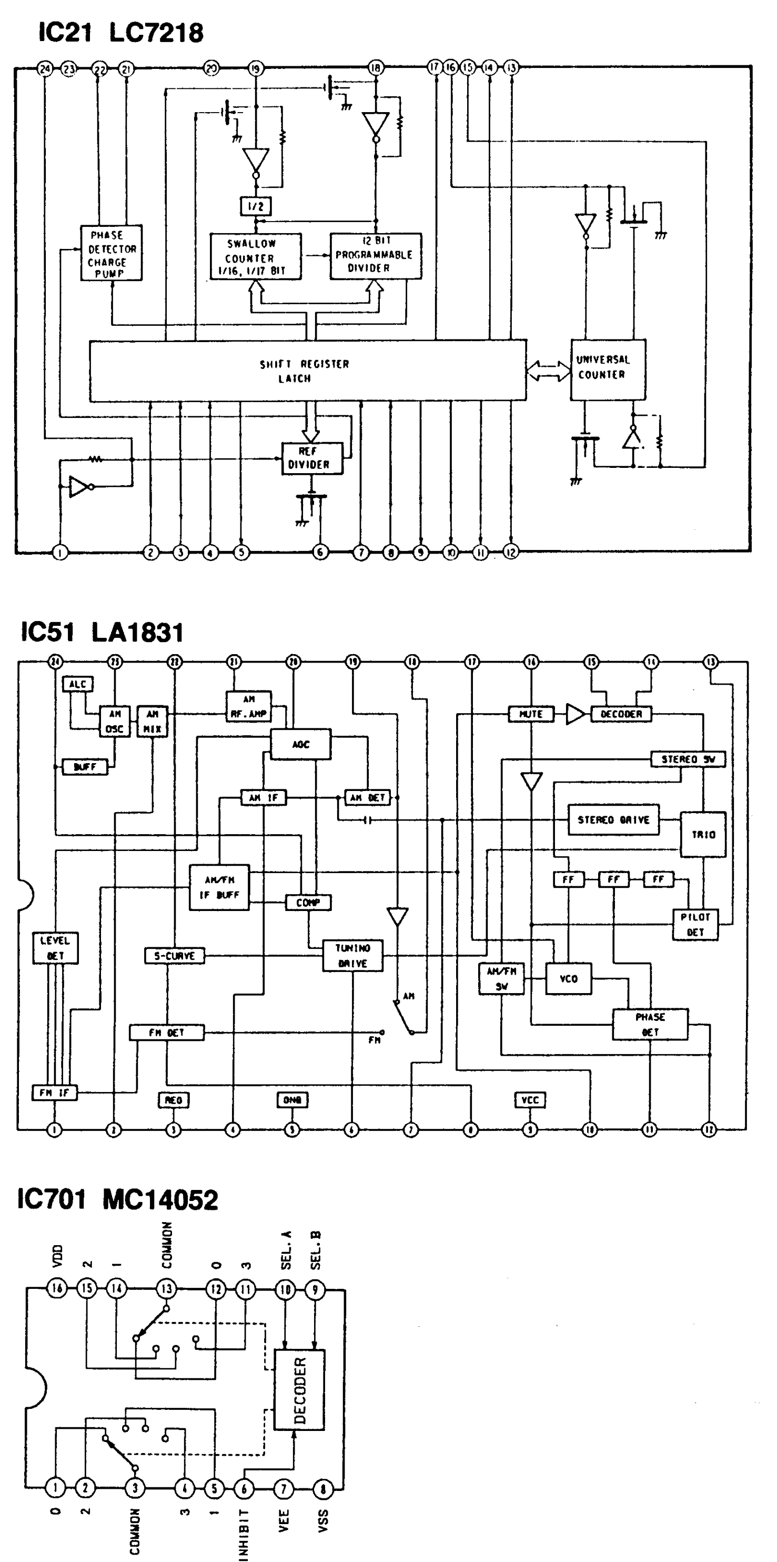
Note:

- o—— : parts extracted from the components side.
- ⌐┐⇤ indicates side identified with part number.
- Δ : internal component.
- ░ : Pattern on the side which is seen.

- EE : East European model
- IT : Italian model
- G : German model

7-7. SCHEMATIC DIAGRAM
• MAIN SECTION (HCD-C50 : AEP, UK, G, IT, EE)

• IC BLOCK DIAGRAMS


IC21 LC7218
PHASE DETECTOR CHARGE PUMP
SWALLOW COUNTER
12 BIT PROGRAMMABLE DIVIDER
SHIFT REGISTER LATCH
UNIVERSAL COUNTER
REF DIVIDER
IC51 LA1831
IC701 MC14052
DECODER
COMMON
INHIBIT
VEE
VSS
VDD

IC705 TC9184P
IC861 LB1639
OUT2 VCC OUT1
DRIVE CIRCUIT
INPUT LOGIC
IN1 GND V CONT IN2
IC841 M50253P
INPUT CONTROL CIRCUIT
12BIT SHIFT REGISTER
LATCH CIRCUIT
BUFFER
IC911 M5230L
START CIRCUIT
REFERENCE VOLTAGE CIRCUIT
OVERHEAT PROTECTION CIRCUIT
ERROR AMP
OVERCURRENT PROTECTION CIRCUIT
[MAIN BOARD]
IC701 FUNCTION SWITCH
IC702 AMP
IC703 FUNCTION SWITCH
IC704 DBFB AMP
IC705 TONE CONTROLLER
IC706 BUFFER
IC801 EQ AMP
IC802 FUNCTION SWITCH
IC841 INPUT REGISTER & BUFFER
IC51 FM/AM MPX
IC21 PLL
[SW BOARD]
S701 INPUT SELECTOR
[VR BOARD]
IC861 VOLUME MOTOR DRIVER
[POWER BOARD]
IC951 POWER AMP
IC911 REG CONTROL
IC921 +5.6V REG
[HP BOARD]
HEADPHONES
[SP TM BOARD]
SPEAKER IMPEDANCE USE 4-16Ω
[TRANSISTOR BOARD]
Q911 +7.5V REG
Q912 -7.5V REG
Q913 SWITCH
Q924,925 SWITCH
Q922,923 POWER ON/OFF SWITCH
Q926 MUTING
Q901 -30V REG
Q941,942 +12V B+ SWITCH
T901 POWER TRANSFORMER
AC IN
Q1,2 FM IF AMP
Q3 B+ SWITCH
Q4,5 B+ SWITCH
Q6,7 SWITCHING
Q8,9 SWITCHING
Q21,22 LOW-PASS FILTER
Q23,24 LOW-PASS FILTER
Q51,52 AF AMP
Q53 MUTING
Q701,702 SWITCH
Q731 DBFB LEVEL
Q732,733 DBFB
Q741,791 MUTE
Q782,783 DBFB
Q841 DBFB LEVEL SWITCH
Q842 DBFB SWITCH
Q843 MUTE SWITCH
FM FRONT-END
MW FRONT-END
LW FRONT-END
FM TUNING LEVEL
ANTENNA
IN
MD/PHONO
OUT
C50:G,IT MODEL
C50:AEP,UK,EE MODEL
DISPLAY BOARD CN603 (See Page 71)
KARAOKE RELAY BOARD CN613 (See Page 74)
KARAOKE RELAY BOARD CN612 (See Page 74)
CD MAIN BOARD CN403 (See Page 69)
TC MAIN BOARD CN354 (See Page 88)
TC MAIN BOARD CN200

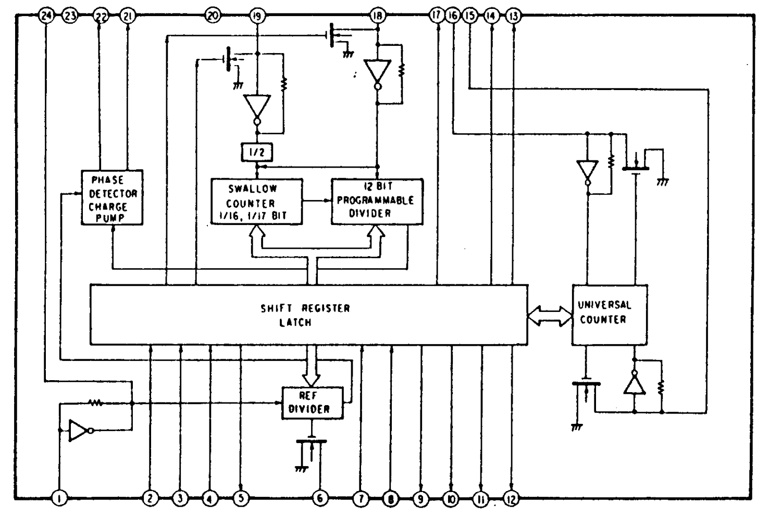
Note:
- All capacitors are in µF unless otherwise noted. pF:µµF 50WV or less are not indicated except for electrolytics and tantalums.
- All resistors are in Ω and 1/4W or less unless otherwise specified.
- △ : internal component.
- ▭ : nonflammable resistor.
- ▭ : fusible resistor.

> **Note:** The components identified by mark ⚠ or dotted line with mark ⚠ are critical for safety.
> Replace only with part number specified.

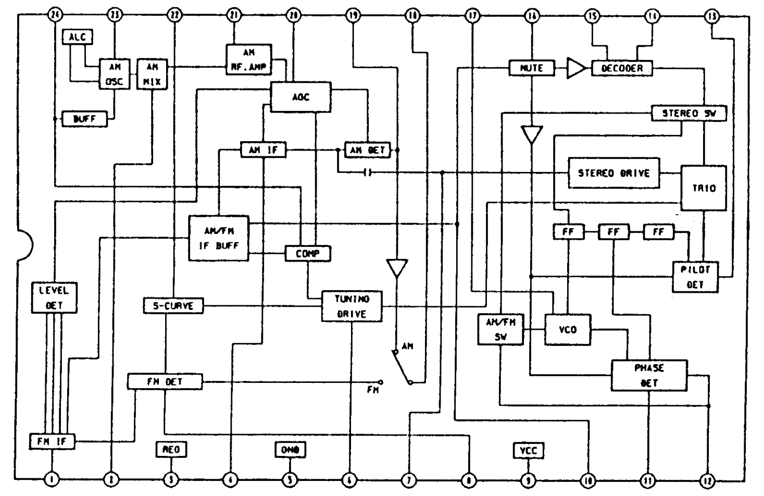
- ━━ : B+ Line
- ▪▪▪▪▪ : B– Line
- ▭ : adjustment for repair.
- Voltage and waveforms are dc with respect to ground under no-signal conditions.
  no mark : FM
- Voltages are taken with a VOM (Input impedance 10Ω). Voltage variations may be noted due to normal production tolerances.
- Signal path.
  - ⇨ : FM
  - ⇨ : CD
  - ▷ : PB
  - ▷› : REC
  - ▷ : MIC
- EE : East European model
- IT : Italian model
- G : German model

• IC BLOCK DIAGRAMS

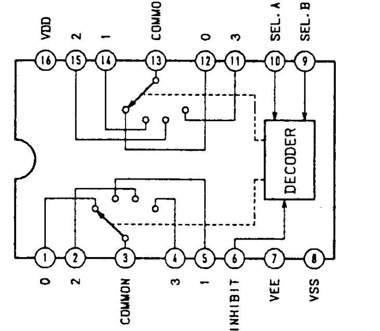
IC21 LC7218


PHASE DETECTOR CHARGE PUMP
SWALLOW COUNTER
12 BIT PROGRAMMABLE DIVIDER
SHIFT REGISTER LATCH
UNIVERSAL COUNTER

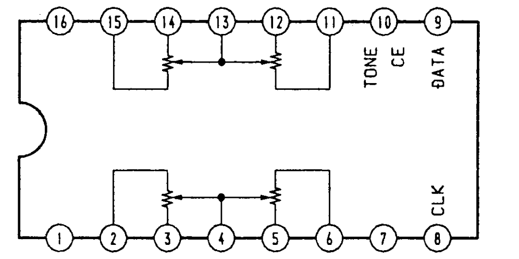
IC51 LA1831


AGC
RF AMP
MIX
OSC
AM IF
FM IF
DECODER
STEREO SW
PILOT DET
VCO
PHASE DET
LEVEL DET
TUNING DRIVE

IC701 MC14052


DECODER
VDD
VEE
VSS
INHIBIT
COMMON

IC705 TC9184P


TONE
CE
DATA
CLK
1
2
3
4
5
6
7
8
9
10
11
12
13
14
15
16

Note:

- All capacitors are in µF unless otherwise noted. pF:µµF 50WV or less are not indicated except for electrolytics and tantalums.
- All resistors are in Ω and 1/4W or less unless otherwise specified.
- △ : internal component.
- ▭ : nonflammable resistor.
- ▭ : fusible resistor.

Note: The components identified by mark ⚠ or dotted line with mark ⚠ are critical for safety. Replace only with part number specified.	**Note:** Les composants identifiés par une marque ⚠ sont critiques pour la sécurité. Ne les remplacer que par une pièce portant le numéro spécifié.

- ▬ : B+ Line
- ╍ : B– Line
- ▭ : adjustment for repair.
- Voltage and waveforms are dc with respect to ground under no-signal conditions.
  no mark : FM
- Voltages are taken with a VOM (Input impedance 10Ω). Voltage variations may be noted due to normal production tolerances.
- Signal path.
  - ⇨ : FM
  - ⇨ : CD
  - ▷ : PB
  - ▷ : REC
  - ▷ : MIC

- CND : Canadian model
- EA : Saudi Arabia model
- AUS : Australian model
- SP : Singapore model

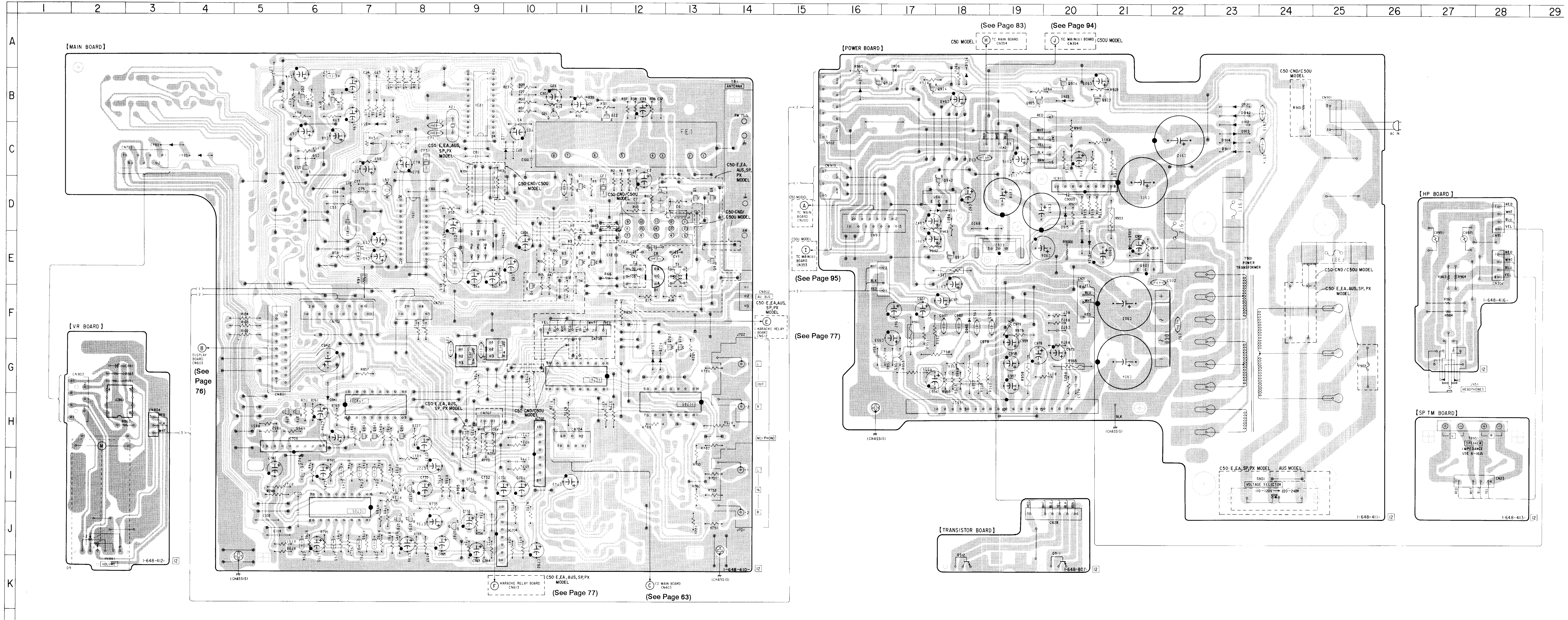
7-8. SCHEMATIC DIAGRAM

• MAIN SECTION (HCD-C50 : CND, E, EA, AUS, SP, PX/C50U)

1
2
3
4
5
6
7
8
9
10
11
12
13
14
15
16
17
18
19
20
21
22
23
24
25
26
27
28
29
A
B
C
D
E
F
G
H
I
J
K
L
M
N
IC841 M50253P
DATA
CLK
INPUT CONTROL CIRCUIT
12BIT SHIFT REGISTER
LATCH CIRCUIT
BUFFER
IC911 M5230L
START CIRCUIT
REFERENCE VOLTAGE CIRCUIT
OVERHEAT PROTECTION CIRCUIT
ERROR AMP
OVERCURRENT PROTECTION CIRCUIT
IC861 LB1639
OUT2
VCC
OUT1
DRIVE CIRCUIT
INPUT LOGIC
IN1
GND
V CONT
IN2
[MAIN BOARD]
C50 CND/C50U MODEL
IC702 AMP
IC701 FUNCTION SWITCH
IC703 FUNCTION SWITCH
MD/PHONO
IN
OUT
KARAOKE RELAY BOARD CN612
(See Page 73)
C50:E,EA, AUS,SP, PX MODEL
Q712 KARAOKE SWITCH
Q701,702 SWITCH
Q731 DBFB LEVEL
Q732,733 DBFB
Q741,791 MUTE
IC704 DBFB AMP
Q782,783 DBFB
IC705 TONE CONTROLLER
IC706 BUFFER
Q841 DBFB LEVEL SWITCH
Q842 DBFB SWITCH
Q843 MUTE SWITCH
IC841 INPUT REGISTER & BUFFER
TUNER
TB1 ANTENNA
FE1 FM FRONT-END
Q1 FM IF AMP
Q3 B+ SWITCH
FM TUNING LEVEL
IC51 FM/AM MPX
Q51,52 AF AMP
Q53 MUTING
Q8,9 SWITCHING
Q4,5 B+ SWITCH
Q6,7 SWITCHING
FE2 MW FRONT-END
SW VCO VOLTAGE
C50:CND/C50U MODEL
Q21,22 LOW PASS FILTER
X21 7.2MHz
IC21 PLL
[VR BOARD]
VOLUME
IC861 VOLUME MOTOR DRIVER
[POWER BOARD]
IC951 POWER AMP
STK4132II
[HP BOARD]
HEADPHONES
[SP TM BOARD]
SPEAKER
IMPEDANCE USE 6-16Ω
Q941,942 +12V B+ SWITCH
IC911 REG CONTROL
[TRANSISTOR BOARD]
Q911 +7.5V REG
Q912 -7.5V REG
Q913 SWITCH
IC921 +5.6V REG
Q924,925 SWITCH
Q922,923 POWER ON/OFF SWITCH
VOLTAGE SELECTOR
T901 POWER TRANSFORMER
AC IN
C50:CND/C50U MODEL
C50:AUS MODEL
Q926 MUTING
Q901 -30V REG
C50U MODEL
TC MAIN(I) BOARD CN354
TC MAIN BOARD CN354
(See Page 90)
(See Page 88)
DISPLAY BOARD CN603
(See Page 71)
KARAOKE RELAY BOARD CN613
(See Page 74)
CD MAIN BOARD CN403
(See Page 69)
AU BUS

7-9. PRINTED WIRING BOARD

- MAIN SECTION (HCD-C50 : CND, E, EA, AUS, SP, PX/C50U)
- See page 32 for Circuit Boards Location and see page 97, 98 for Semiconductor Lead Layouts.


1
2
3
4
5
6
7
8
9
10
11
12
13
14
15
16
17
18
19
20
21
22
23
24
25
26
27
28
29
A
B
C
D
E
F
G
H
I
J
K
[MAIN BOARD]
[VR BOARD]
[POWER BOARD]
[HP BOARD]
[SP TM BOARD]
[TRANSISTOR BOARD]
(See Page 83)
(See Page 94)
(See Page 95)
(See Page 77)
(See Page 76)
(See Page 77)
(See Page 63)
1-648-410-
1-648-412-
1-648-411-
1-648-416-
1-648-413-
1-648-807-

- **Semiconductor Location**

Ref. No.	Location	Ref. No.	Location
D1	F-13	Q1	D-11
D21	C-10	Q3	E-11
D51	C-7	Q4	E-11
D703	G-13	Q5	E-11
D704	G-13	Q6	F-10
D705	J-9	Q7	D-13
D841	H-6	Q8	D-13
D861	C-4	Q9	E-13
D862	C-3	Q21	B-11
D901	G-22	Q22	C-12
D903	E-20	Q51	B-6
D904	E-21	Q52	B-6
D905	E-21	Q53	D-6
D906	B-18	Q701	G-13
D911	C-23	Q702	G-13
D912	C-23	Q731	J-9
D913	C-23	Q732	J-8
D914	C-23	Q733	J-8
D915	D-20	Q741	H-6
D920	E-19	Q782	K-9
D921	B-23	Q783	K-8
D922	B-16	Q791	H-6
D923	B-20	Q841	I-8
D924	A-18	Q842	I-7
D941	D-18	Q843	I-7
D942	B-23	Q901	F-23
D943	G-18	Q911	K-20
		Q912	K-18
IC21	B-9	Q913	E-18
IC51	D-8	Q921	E-19
IC701	G-11	Q922	B-20
IC702	I-11	Q923	B-20
IC703	H-12	Q924	B-17
IC704	K-10	Q925	B-18
IC705	J-7	Q926	B-20
IC706	I-6	Q941	D-18
IC841	H-7	Q942	D-18
IC861	H-2		
IC911	D-21		
IC921	E-19		
IC951	H-19		

Note:

- o—— : parts extracted from the components side.
- ⬚← indicates side identified with part number.
- △ : internal component.
- ░ : Pattern on the side which is seen.

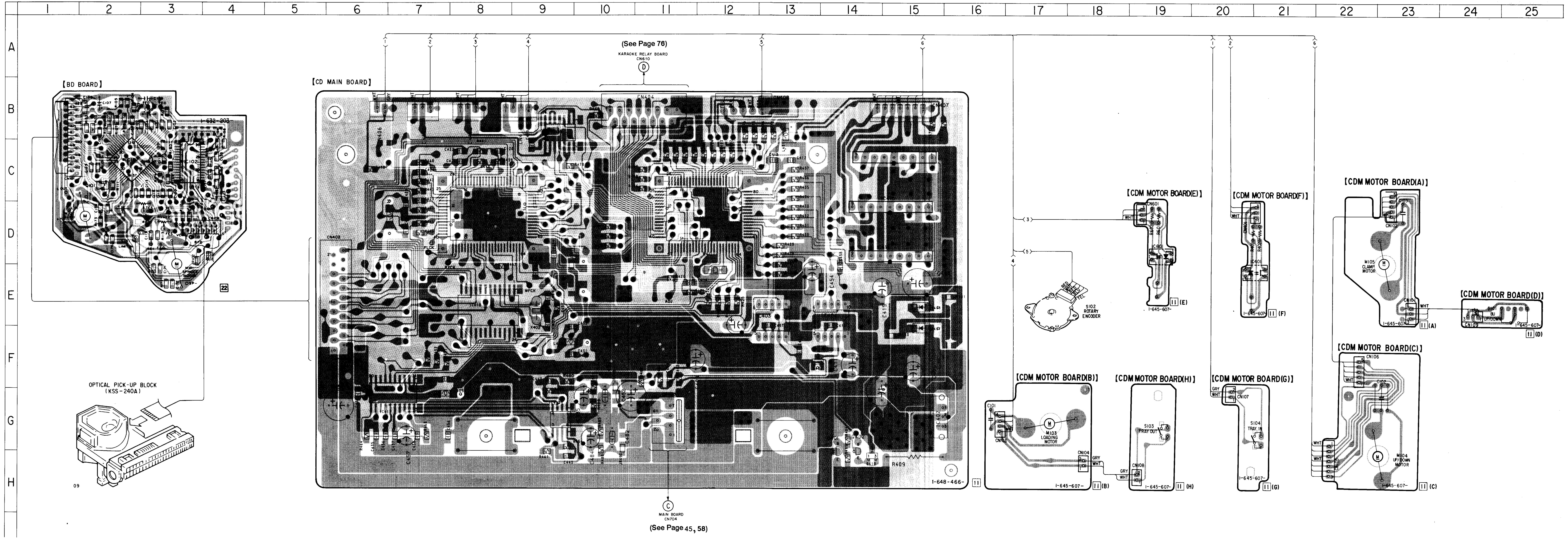
- CND : Canadian model
- EA : Saudi Arabia model
- AUS : Australian model
- SP : Singapore model

7-10. PRINTED WIRING BOARD

- CD SECTION
- See page 32 for Circuit Boards Location and see page 97, 98 for Semiconductor Lead Layouts.

- **Semiconductor Location**

Ref. No.	Location
D406	F-13
D407	E-15
D408	E-15
D410	G-14
IC101	C-2
IC102	C-3
IC401	E-20
IC402	G-15
IC403	E-12
IC404	E-13
IC408	B-9
IC409	C-8
IC410	E-8
IC411	F-6
IC412	G-9
IC414	D-14
IC415	C-14
IC416	C-14
IC450	C-11
IC601	D-19
Q101	C-2
Q401	G-14
Q402	G-14


1
2
3
4
5
6
7
8
9
10
11
12
13
14
15
16
17
18
19
20
21
22
23
24
25
A
B
C
D
E
F
G
H
(See Page 78)
KARAOKE RELAY BOARD
CN610
D
[BD BOARD]
[CD MAIN BOARD]
CN404
CN402
OPTICAL PICK-UP BLOCK
(KSS-240A)
R409
1-648-466-
C
MAIN BOARD
CN704
(See Page 45, 58)
[CDM MOTOR BOARD(E)]
[CDM MOTOR BOARD(F)]
[CDM MOTOR BOARD(A)]
[CDM MOTOR BOARD(D)]
[CDM MOTOR BOARD(C)]
[CDM MOTOR BOARD(B)]
[CDM MOTOR BOARD(H)]
[CDM MOTOR BOARD(G)]
S102
ROTARY
ENCODER
M105
CLAMP
MOTOR
M103
LOADING
MOTOR
S103
TRAY OUT
S104
TRAY IN
M104
UP/DOWN
MOTOR
CN601
CN104
CN106
CN107
CN108
WHT
GRY
1-645-607-
11 (A)
11 (B)
11 (C)
11 (D)
11 (E)
11 (F)
11 (G)
11 (H)

Note:

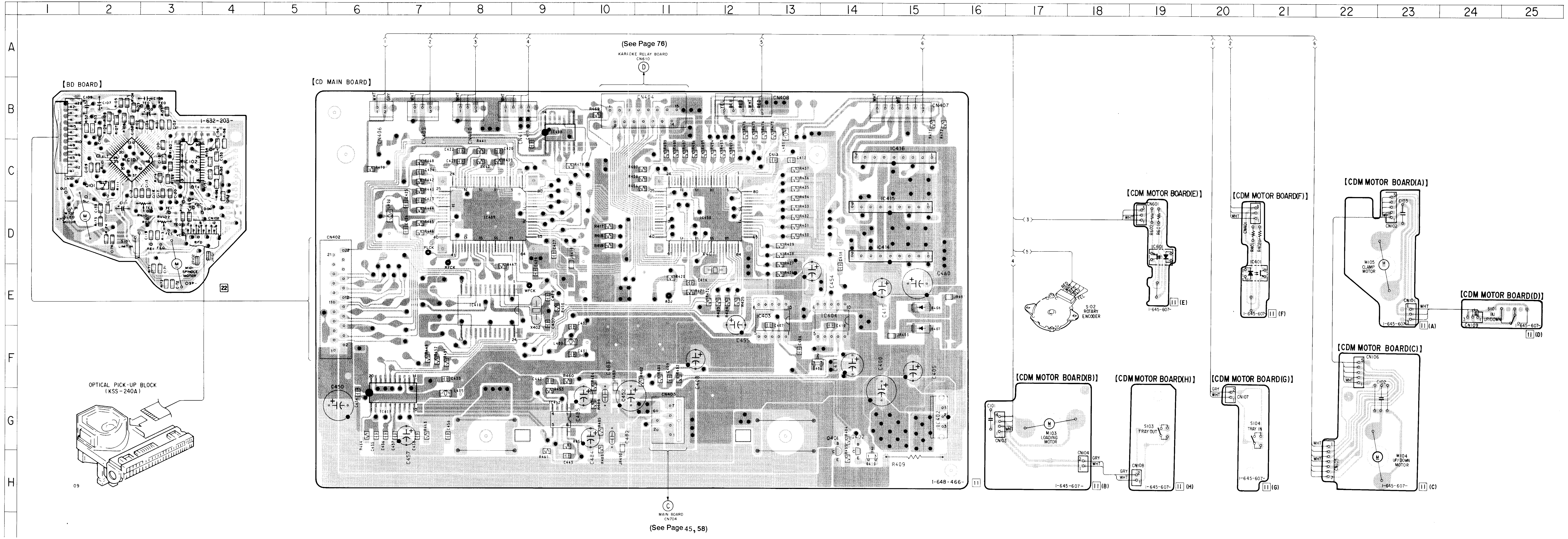
- o—— : parts extracted from the components side.
- ● : Through hole.
- ▨ : Pattern on the side which is seen.
- ░ : Pattern of the rear side.

7-10. PRINTED WIRING BOARD

- CD SECTION
- See page 32 for Circuit Boards Location and see page 97, 98 for Semiconductor Lead Layouts.

- **Semiconductor Location**

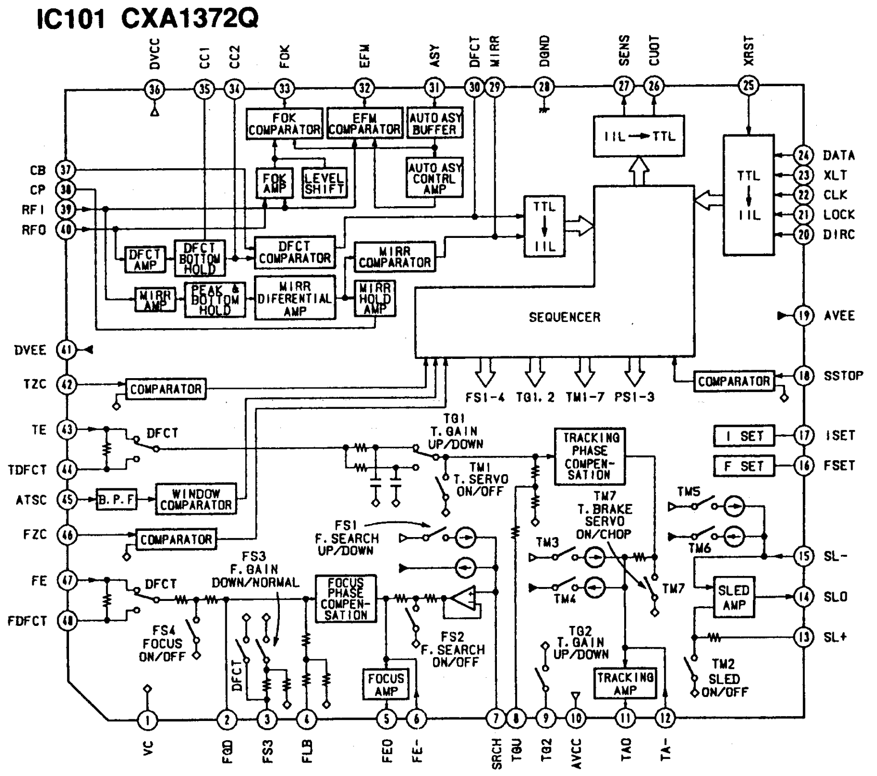
Ref. No.	Location
D406	F-13
D407	E-15
D408	E-15
D410	G-14
IC101	C-2
IC102	C-3
IC401	E-20
IC402	G-15
IC403	E-12
IC404	E-13
IC408	B-9
IC409	C-8
IC410	E-8
IC411	F-6
IC412	G-9
IC414	D-14
IC415	C-14
IC416	C-14
IC450	C-11
IC601	D-19
Q101	C-2
Q401	G-14
Q402	G-14


(See Page 76)
KARAOKE RELAY BOARD CN610
D
[BD BOARD]
1-632-203-
[CD MAIN BOARD]
CN402
CN404
CN406
CN407
CN408
IC416
IC415
IC414
IC409
IC450
IC403
IC404
IC408
IC410
IC411
IC412
C450
C460
C455
C457
Q401
R409
1-648-466-
11
22
OPTICAL PICK-UP BLOCK
(KSS-240A)
C
MAIN BOARD CN704
(See Page 45, 58)
S102
ROTARY ENCODER
[CDM MOTOR BOARD(E)]
[CDM MOTOR BOARD(F)]
[CDM MOTOR BOARD(A)]
[CDM MOTOR BOARD(D)]
[CDM MOTOR BOARD(C)]
[CDM MOTOR BOARD(B)]
[CDM MOTOR BOARD(H)]
[CDM MOTOR BOARD(G)]
IC601
M105
CLAMP MOTOR
M103
LOADING MOTOR
S103
TRAY OUT
S104
TRAY IN
M104
UP/DOWN MOTOR
1-645-607-
(A)
(B)
(C)
(D)
(E)
(F)
(G)
(H)
A
B
C
D
E
F
G
H
1
2
3
4
5
6
7
8
9
10
11
12
13
14
15
16
17
18
19
20
21
22
23
24
25

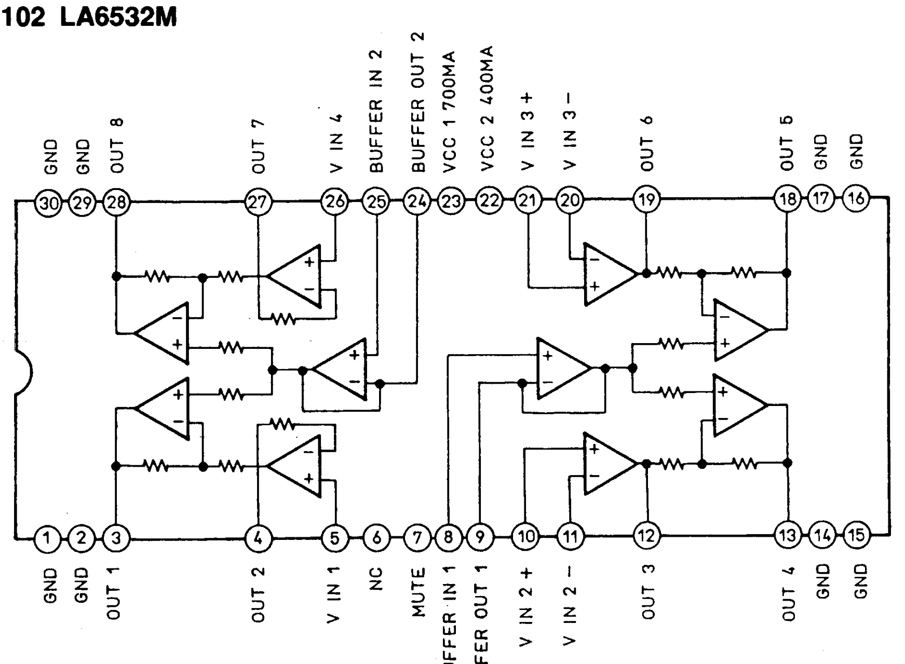
Note:
- ○—— : parts extracted from the components side.
- ● : Through hole.
- ░ : Pattern on the side which is seen.

• IC BLOCK DIAGRAMS

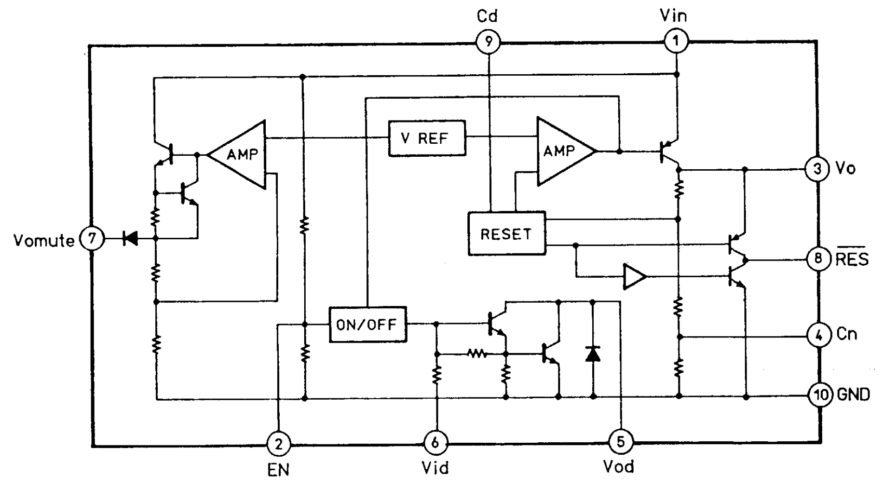
IC101 CXA1372Q


DVCC
CC1
CC2
FOK
EFM
ASY
DFCT
SENS
XRST
DATA
XLT
CLK
LOCK
DIRC
AVEE
SSTOP
ISET
FSET
SEQUENCER
FOK COMPARATOR
EFM COMPARATOR
AUTO ASY BUFFER
DFCT COMPARATOR
MIRR COMPARATOR
WINDOW COMPARATOR
TRACKING PHASE COMPENSATION
FOCUS PHASE COMPENSATION
SLED AMP
TRACKING AMP
FOCUS AMP
COMPARATOR
VC
FEO
TAO
SLO
SL+
SL-

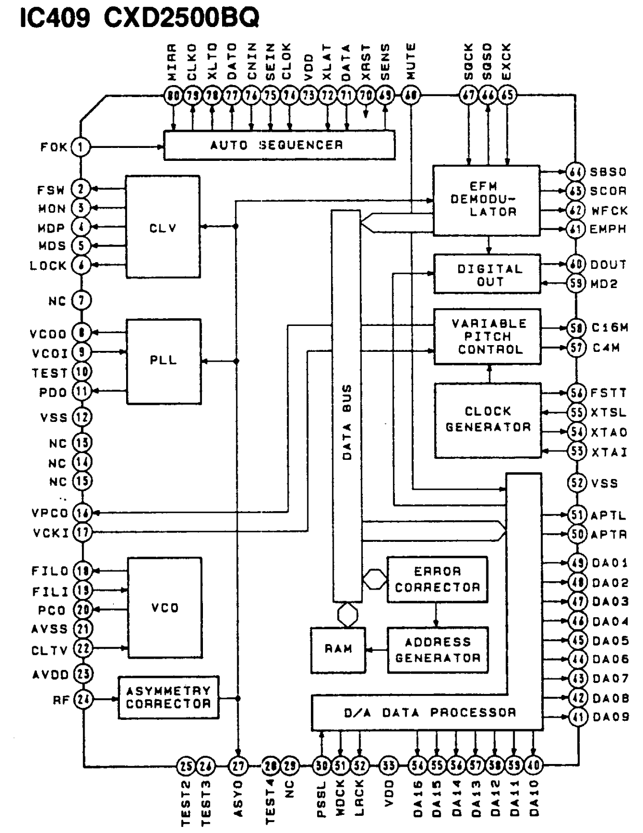
IC102 LA6532M


GND
GND
OUT 8
OUT 7
V IN 4
BUFFER IN 2
BUFFER OUT 2
VCC 1 700MA
VCC 2 400MA
V IN 3 +
V IN 3 −
OUT 6
OUT 5
OUT 1
OUT 2
V IN 1
NC
MUTE
BUFFER IN 1
BUFFER OUT 1
V IN 2 +
V IN 2 −
OUT 3
OUT 4
GND

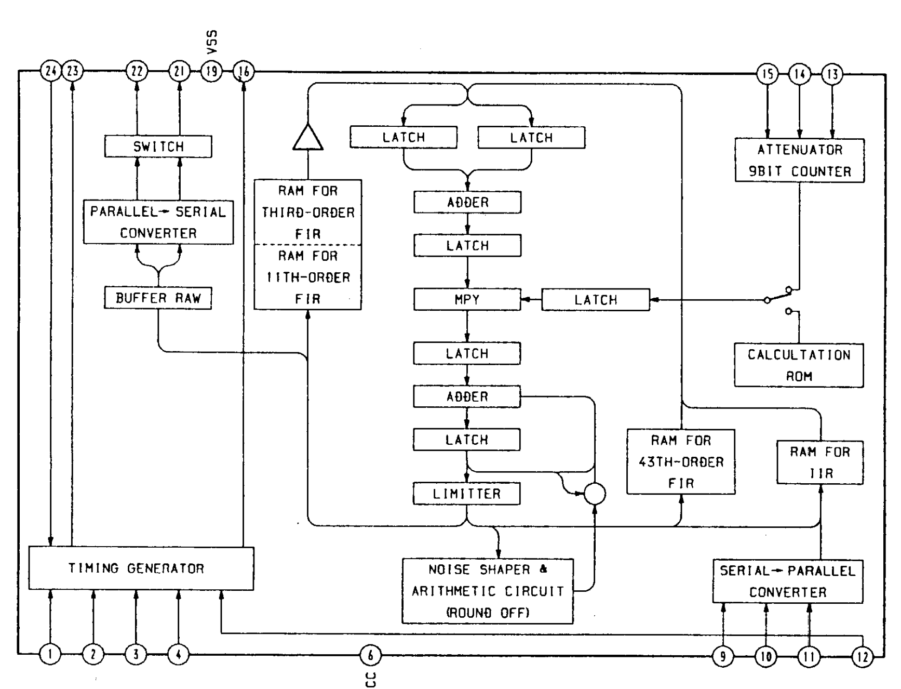
IC403, 404 LA5601


Cd
Vin
Vo
RES
Cn
GND
EN
Vid
Vod
Vomute
AMP
V REF
RESET
ON/OFF

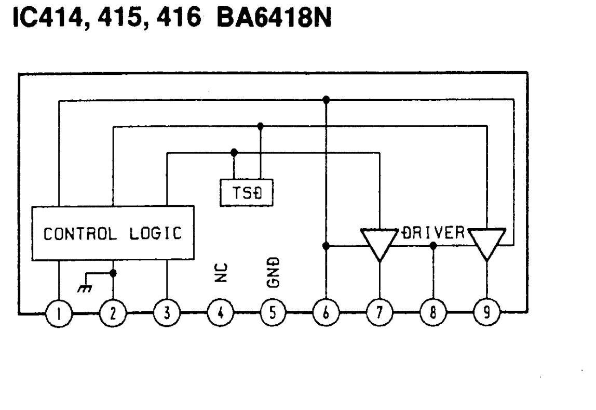
IC409 CXD2500BQ


AUTO SEQUENCER
CLV
PLL
VCO
ASYMMETRY CORRECTOR
EFM DEMODULATOR
DIGITAL OUT
VARIABLE PITCH CONTROL
CLOCK GENERATOR
ERROR CORRECTOR
RAM
ADDRESS GENERATOR
D/A DATA PROCESSOR
DATA BUS

IC410 MSM6538-01GS-VKR1


SWITCH
PARALLEL→SERIAL CONVERTER
BUFFER RAM
RAM FOR THIRD-ORDER FIR
RAM FOR 11TH-ORDER FIR
LATCH
ADDER
MPY
LIMITTER
ATTENUATOR 9BIT COUNTER
CALCULATION ROM
RAM FOR 45TH-ORDER FIR
RAM FOR IIR
TIMING GENERATOR
NOISE SHAPER & ARITHMETIC CIRCUIT ROUND OFF)
SERIAL→PARALLEL CONVERTER
VCC

IC414, 415, 416 BA6418N


TSD
CONTROL LOGIC
DRIVER
NC
GND

Note:

- All capacitors are in μF unless otherwise noted. pF:μμF 50WV or less are not indicated except for electrolytics and tantalums.
- All resistors are in Ω and 1/4W or less unless otherwise specified.
- △ : internal component.

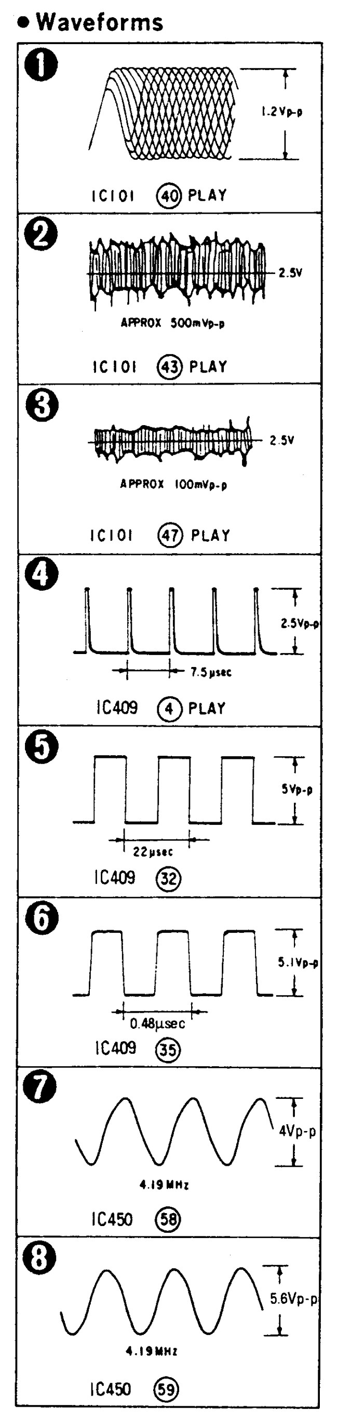
Note:	Note:
The components identified by mark ⚠ or dotted line with mark ⚠ are critical for safety. Replace only with part number specified.	Les composants identifiés par une marque ⚠ sont critiques pour la sécurité. Ne les remplacer que par une pièce portant le numéro spécifié.

- ▬▬ : B+ Line
- ▪▪▪▪▪ : B− Line
- ☐ : adjustment for repair.
- Voltage and waveforms are dc with respect to ground under no-signal conditions.
  no mark : CD PLAY
- Voltages are taken with a VOM (Input impedance 10Ω). Voltage variations may be noted due to normal production tolerances.
- Waveforms are taken with a oscilloscope. Voltage variations may be noted due to normal production tolerances.
- Circled numbers refer to waveforms.
- Signal path.
  ⇨ : CD

7-11. SCHEMATIC DIAGRAM
• CD SECTION

1
2
3
4
5
6
7
8
9
10
11
12
13
14
15
16
17
18
19
20
21
22
23
24
25
26
27
28
29
30
A
B
C
D
E
F
G
H
I
J
K
L
CDM MOTOR BOARD (H)
CDM MOTOR BOARD (B)
CDM MOTOR BOARD (G)
CDM MOTOR BOARD (F)
CDM MOTOR BOARD (E)
CDM MOTOR BOARD (C)
CDM MOTOR BOARD (A)
CDM MOTOR BOARD (D)
S103 TRAY OUT
M103 LOADING MOTOR
S104 TRAY IN
IC401 TRAY POSITION SENSOR
IC601 TRAY POSITION SENSOR
M104 UP/DOWN MOTOR
M105 CLAMP MOTOR
S101 BU UP/DOWN
OPTICAL PICK-UP BLOCK KSS-240A
BD BOARD
FOCUS COIL
TRACKING COIL
IC101 FOCUS/TRACKING /SLED SERVO EFM COMPARATOR
FOCUS GAIN
TRACKING GAIN
IC102 FOCUS/TRACKING COIL DRIVE SPINGLE/SLED MOTOR DRIVE
Q101 DEFFECT SWITCH
M101 SPINDLE MOTOR
M102 SLED MOTOR
S101 LIMIT SW
CN101 22P
CHASSIS
CD MAIN BOARD
S102 ROTARY ENCODER
IC408
IC409 DIGITAL SIGNAL PROCESSOR CLV SERVO
IC450 CD SYSTEM CONTROL
IC414 LOADING MOTOR DRIVER
IC415 UP/DOWN MOTOR DRIVER
Q401,402 B+ SWITCH
IC402 REG
IC416 CLAMP MOTOR DRIVER
IC404 RESET (UN-SW. REG)
IC403 RESET (SW. REG)
IC410 DIGITAL FILTER
IC411 D/A CONVERTER
IC412 LINE AMP
KARAOKE RELAY BOARD CN610 (See Page 74)
MAIN BOARD CN704 (See Page 50,55)
TO CHASSIS
CN404 13P

• Waveforms



7-12. SCHEMATIC DIAGRAM
• DISPLAY SECTION

DISPLAY BOARD
FL501 FLUORESCENT INDICATOR TUBE
(See Page 49, 54)
MAIN BOARD CN801
CN603 19P
IC501 SYSTEM CONTROL, FL DRIVER
IC502 AMP
Q501 RESET
Q502 BUFFER
C50: E, EA, AUS, SP, PX MODEL
KARAOKE
CLOCK DISPLAY
CLOCK SET TIMER
MEMORY/NEXT
ST/MONO
MODE
BAND
PRESET TIMER
CLOCK SET TIMER REC
Q604 DISC SENSER
Q601 BUFFER
IC601 CD SYSTEM CONTROL (KEY CONTROL)
CN601 15P
DISC CHECK
CHECK
CLEAR
CONTINUE
SHUFFLE
PROGRAM
REPEAT
EDIT
DISC 1
DISC 2
DISC 3
DISC 4
DISC 5
OPEN/CLOSE
1 DISC/ALL DISCS
PLAY MODE
MUSIC/SCAN
Q602, 603 LED B+ SWITCH
Q605-609 LED DRIVER
D605-607 GREEN
D608-612 ORANGE
FL501 FLUORESCENT INDICATOR TUBE
TIMER REC SLEEP
ALL
1 DISCS
SHUFFLE
PROGRAM
REPEAT 1
D.SCAN
EDIT
A B
DBFB
SURROUND
KARAOKE
ROCK
JAZZ
HALL
FLAT
DISC
TRACK
SIDE
AUTO TUNED
MONO STEREO
MEMORY
kHz
MHz
100 400 1k 4k 12k
1 2 3 4 5
6 7 8 9 10
11 12 13 14 15
16 17 18 19 20
C50: AEP, UK, EE, G, IT MODEL
MAIN BOARD CN750
(See Page 50)
EXCEPT C50: CND / C50U MODEL
MAIN BOARD CN707
(See Page 50, 55)
KARAOKE RELAY BOARD
C50: E, EA, AUS, SP, PX MODEL
Q712 SWITCH
IC604 SWITCH
IC603 LINE AMP
MAIN BOARD CN709
(See Page 54)
CD MAIN BOARD CN404
(See Page 66)
EXCEPT C50: CND/C50U MODEL
MIC BOARD
IC831 MIC AMP
MIC LEVEL
MIC
FUNC BOARD
IC401 LED DRIVER
IC503 REMOTE SENSOR
POWER ON/STANDBY
TUNER
TAPE
CD
MD/PHONO
SURROUND
DBFB
PRESET
C50 MODEL
C50U MODEL

• **IC BLOCK DIAGRAM**
IC502 M51953BPF

NC
Vcc
OUT
Cd
NC
NC
NC
GND

Note:

- All capacitors are in μF unless otherwise noted. pF:μμF 50WV or less are not indicated except for electrolytics and tantalums.
- All resistors are in Ω and 1/4W or less unless otherwise specified.
- △ : internal component.
- ▬▬ : B+ Line
- ▪▪▪▪▪ : B– Line
- Voltage and waveforms are dc with respect to ground under no-signal conditions.
  no mark : FM
- Voltages are taken with a VOM (Input impedance 10MΩ). Voltage variations may be noted due to normal production tolerances.
- Signal path.
  ⇨ : FM
  ▷ : MIC

- CND : Canadian model
- G : German model
- IT : Italian model
- EE : East European model
- EA : Saudi Arabia model
- AUS : Australian model
- SP : Singapore model

7-13. PRINTED WIRING BOARD

- DISPLAY SECTION
- See page 32 for Circuit Boards Location and see page 97, 98 for Semiconductor Lead Layouts.

1
2
3
4
5
6
7
8
9
10
11
12
13
14
15
16
17
18
19
20
21
22
23
24
25
26
27
28
29
30
31
32
33
34
A
B
C
D
E
F
G
H
I
J
[DISPLAY BOARD]
(See Page 44, 57)
MAIN BOARD CN801
B
1-648-465-11
C50 MODEL
[FUNC BOARD]
C50U MODEL
[FUNC BOARD]
FL501 FLUORESCENT INDICATOR TUBE
TIMER REC SLEEP
ALL 1 DISCS
SHUFFLE PROGRAM REPEAT 1
D.SCAN EDIT A B
DBFB
SURROUND
KARAOKE
ROCK
JAZZ
HALL
FLAT
MEMORY
kHz
MHz
(See Page 63)
CD MAIN BOARD CN604
D
[KARAOKE RELAY BOARD]
C50:E,EA,AUS,SP,PX MODEL
E
MAIN BOARD CN705
(See Page 58)
1-648-763-11
F
(See Page 44, 58)
MAIN BOARD CN707
EXCEPT C50/CND/C50U MODEL
C50:AEP,UK,EE,G,IT MODEL
E
MAIN BOARD CN750
(See Page 45)
EXCEPT C50/CND/C50U MODEL
[MIC BOARD]
(CHASSIS)
MIC LEVEL
RV831
J831
MIC
12

- **Semiconductor Location**

Ref. No.	Location	Ref. No.	Location
D421 ○	C-18	D881	I-6
D421 ●	C-28	D882	I-7
D422 ○	C-17	D883	I-9
C422 ●	C-27	D884	I-9
D423 ○	C-16	D885	I-10
D423 ●	C-26		
D424 ○	C-15	IC401 ○	C-21
D424 ●	C-25	IC401 ●	C-31
D425	B-6	IC501	D-10
D426	B-5	IC502	D-8
D502	C-11	IC503 ○	D-23
D503	C-11	IC503 ●	D-33
D504	C-9	IC601	D-6
D505	C-12	IC603	H-19
D506	C-11	IC604	J-19
D507	C-10	IC831	G-23
D508	B-10		
D601	E-6	Q501	C-8
D603	D-3	Q502	C-9
D604	E-3	Q601	E-5
D605	F-3	Q602	D-3
D606	G-3	Q603	D-3
D607	G-3	Q604	G-10
D608	D-3	Q605	E-3
D609	E-3	Q606	E-3
D610	F-3	Q607	F-3
D611	G-3	Q608	G-3
D612	G-3	Q609	H-3
D627	F-10	Q712	J-19

○ : (C50)
● : (C50U)

Note:

- o—— : parts extracted from the components side.
- ● : Through hole.
- ▨ : Pattern on the side which is seen.
- ░ : Pattern of the rear side.

- CND : Canadian model
- G : German model
- IT : Italian model
- EE : East European model
- EA : Saudi Arabia model
- AUS : Australian model
- SP : Singapore model

7-13. PRINTED WIRING BOARD

- DISPLAY SECTION
- See page 32 for Circuit Boards Location and see page 97, 98 for Semiconductor Lead Layouts.

1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 16 17 18 19 20 21 22 23 24 25 26 27 28 29 30 31 32 33 34
A B C D E F G H I J
[DISPLAY BOARD]
(See Page 44, 57)
MAIN BOARD CN801
B
FL501 FLUORESCENT INDICATOR TUBE
1-648-465- 11
C50 MODEL
[FUNC BOARD]
1-648-451- 11
C50U MODEL
[FUNC BOARD]
1-648-453- 11
TIMER REC SLEEP
ALL SHUFFLE D.SCAN
1 DISCS PROGRAM EDIT
REPEAT 1 A B
DBFB
SURROUND
KARAOKE
ROCK
JAZZ
ALL
FLAT
MEMORY
kHz MHz
(See Page 63)
CD MAIN BOARD CN404
D
[KARAOKE RELAY BOARD]
C50:E,EA,AUS,SP,PX MODEL
E
MAIN BOARD CN705
(See Page 58)
1-648-763- 11
F
MAIN BOARD CN707
(See Page 44, 58)
EXCEPT C50 CND/C50U MODEL
E
MAIN BOARD CN702
(See Page 45)
C50:AEP,UK,EE,G,IT MODEL
EXCEPT C50 CND/C50U MODEL
[MIC BOARD]
CHASSIS
MIC LEVEL
RV831
J831 MIC
1-648-415- 12

- **Semiconductor Location**

Ref. No.	Location	Ref. No.	Location
D421 ○	C-18	D881	I-6
D421 ●	C-28	D882	I-7
D422 ○	C-17	D883	I-9
C422 ●	C-27	D884	I-9
D423 ○	C-16	D885	I-10
D423 ●	C-26		
D424 ○	C-15	IC401 ○	C-21
D424 ●	C-25	IC401 ●	C-31
D425	B-6	IC501	D-10
D426	B-5	IC502	D-8
D502	C-11	IC503 ○	D-23
D503	C-11	IC503 ●	D-33
D504	C-9	IC601	D-6
D505	C-12	IC603	H-19
D506	C-11	IC604	J-19
D507	C-10	IC831	G-23
D508	B-10		
D601	E-6	Q501	C-8
D603	D-3	Q502	C-9
D604	E-3	Q601	E-5
D605	F-3	Q602	D-3
D606	G-3	Q603	D-3
D607	G-3	Q604	G-10
D608	D-3	Q605	E-3
D609	E-3	Q606	E-3
D610	F-3	Q607	F-3
D611	G-3	Q608	G-3
D612	G-3	Q609	H-3
D627	F-10	Q712	J-19

○ : (C50)
● : (C50U)

Note:

- ○—— : parts extracted from the components side.
- ● : Through hole.
- ▨ : Pattern on the side which is seen.

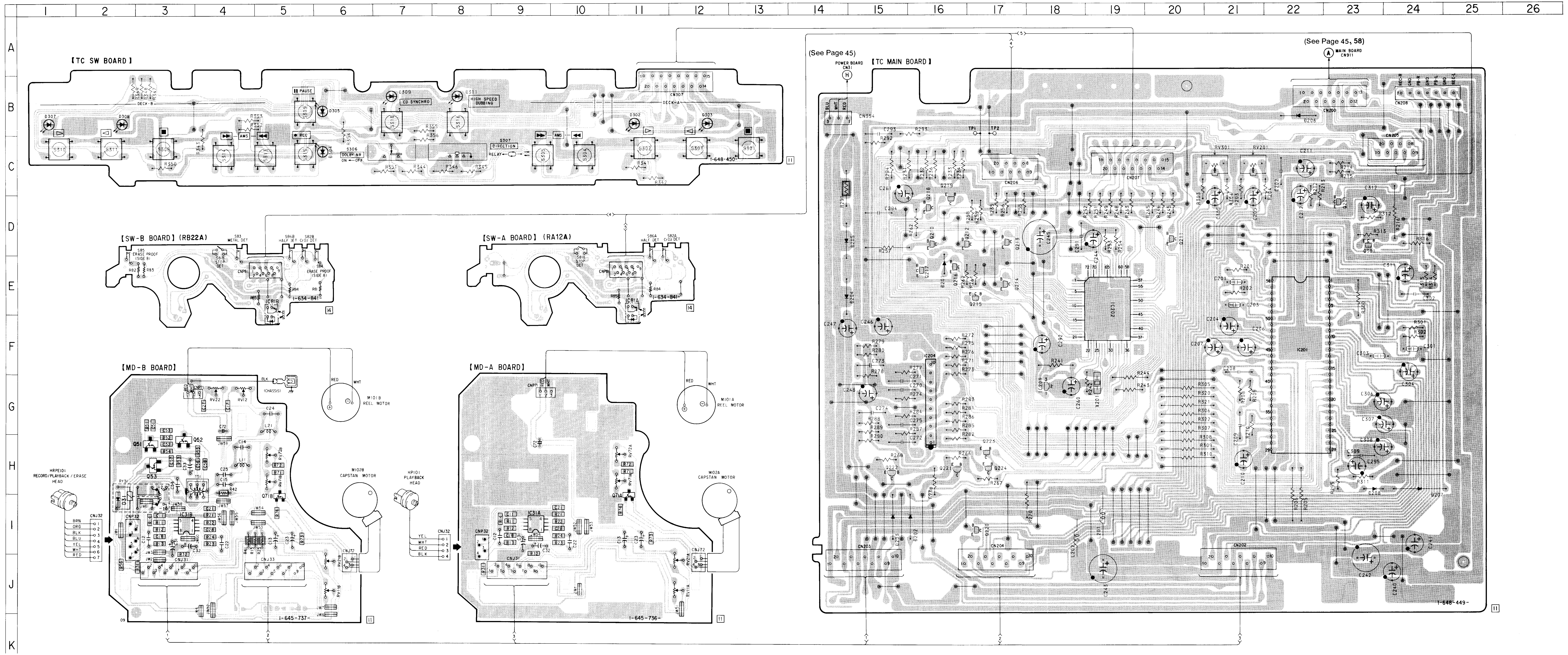
- CND : Canadian model
- G : German model
- IT : Italian model
- EE : East European model
- EA : Saudi Arabia model
- AUS : Australian model
- SP : Singapore model

7-14. PRINTED WIRING BOARD

- DECK SECTION (HCD-C50)
- See page 32 for Circuit Boards Location and see page 97, 98 for Semiconductor Lead Layouts.

• Semiconductor Location

Ref. No.	Location
D31	I-2
D201	E-16
D202	I-16
D203	I-16
D204	E-15
D205	D-15
D206	B-22
D207	I-24
D208	H-23
D302	B-11
D303	B-12
D304	C-6
D305	B-6
D307	B-1
D308	B-2
D309	B-7
D311	B-8
IC31A	I-9
IC31B	I-3
IC81A	F-11
IC81B	F-5
IC201	E-22
IC202	E-19
IC203	G-18
IC204	F-16
Q51	H-3
Q52	H-3
Q53	H-3
Q71A	I-11
Q71B	I-5
Q201	D-23
Q210	D-16
Q211	D-20
Q212	D-16
Q213	D-17
Q214	E-17
Q215	E-17
Q216	E-16
Q217	E-16
Q218	D-16
Q219	D-16
Q220	I-17
Q221	H-17
Q222	H-15
Q223	H-17
Q224	H-17
Q301	D-23


【TC SW BOARD】
1-648-450-
【SW-B BOARD】(RB22A)
1-634-841-
【SW-A BOARD】(RA12A)
1-634-841-
【MD-B BOARD】
M101B REEL MOTOR
M102B CAPSTAN MOTOR
HRPE101 RECORD/PLAYBACK/ERASE HEAD
1-645-737-
【MD-A BOARD】
M101A REEL MOTOR
M102A CAPSTAN MOTOR
HP101 PLAYBACK HEAD
1-645-736-
(See Page 45)
POWER BOARD CN31
【TC MAIN BOARD】
(See Page 45, 58)
MAIN BOARD CN911
1-648-449-

Note:

- o—— : parts extracted from the components side.
- ░░ : Pattern on the side which is seen.

7-15. SCHEMATIC DIAGRAM
• DECK SECTION (HCD-C50)

SW-A BOARD (RA12A)
IC81A ROTATION DET
MD-A BOARD
HP101 PLAYBACK HEAD
IC31A PLAYBACK EQ AMP
Q71A NORM/HIGH SPEED SWITCH
M101A REEL MOTOR
M102A CAPSTAN MOTOR
SW-B BOARD (RB22A)
IC81B ROTATION DET
MD-B BOARD
HRPE101 RECORD/PLAYBACK ERASE HEAD
IC31B PLAYBACK EQ AMP
Q71B NORM/HIGH SPEED SWITCH
M101B REEL MOTOR
M102B CAPSTAN MOTOR
Q53 BIAS REG.
Q51, 52 BIAS OSC
T51 BIAS OSC
TC MAIN BOARD
IC201 DOLBY NR, REC EQ AMP, AMS
IC201 HA12171NT
Q220 REC BIAS SWITCH
Q201, 301 LINE MUTE
Q221 CAPSTAN MOTOR SWITCH DECK-A
Q222 CAPSTAN MOTOR SWITCH DECK-B
Q223, 224 CAPSTAN MOTOR SPEED CONTROL
Q218 RELAY DRIVE
Q215-217 AUS BUFFER
Q212-214, 219 SWITCH
Q210 AMS BUFFER
Q211 DUBBING SPEED SWITCHING
IC204 REEL MOTOR DRIVE
IC203 RESET
IC202 DECK SYSTEM CONTROL
IC202 M50964-260FP
REC LEVEL R
REC LEVEL L
PLAYBACK LEVEL (L)
PLAYBACK LEVEL (R)
TAPE SPEED
FOR CHECK
POWER BOARD CN911
(See Page 50, 55)
POWER BOARD CN31
(See Page 50, 55)
TC SW BOARD
DECK A
DECK B
DOLBY NR
DIRECTION
RELAY
HIGH SPEED DUBBING
CD SYNCHRO
TEST MODE

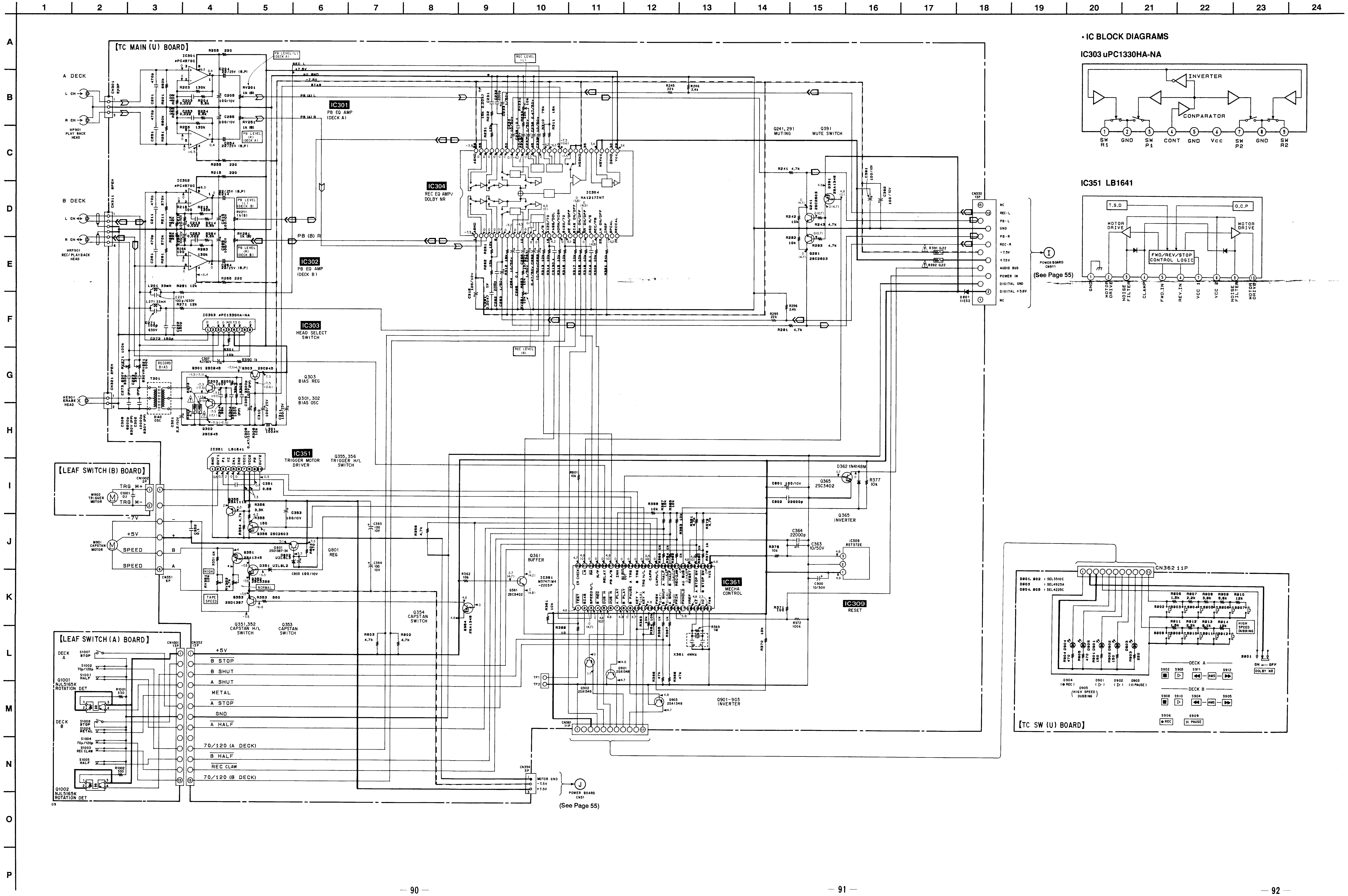
Note:

- All capacitors are in µF unless otherwise noted. pF:µµF 50WV or less are not indicated except for electrolytics and tantalums.
- All resistors are in Ω and 1/4W or less unless otherwise specified.
- △ : internal component.
- ▭ : nonflammable resistor.

Note:	Note:
The components identified by mark ⚠ or dotted line with mark ⚠ are critical for safety. Replace only with part number specified.	Les composants identifiés par une marque ⚠ sont critiques pour la sécurité. Ne les remplacer que par une pièce portant le numéro spécifié.

- ▬▬ : B+ Line
- ▪▪▪▪▪ : B– Line
- ▭ : adjustment for repair.
- Voltage and waveforms are dc with respect to ground under no-signal conditions.
  no mark : PB
  (   ) : REC
- Voltages are taken with a VOM (Input impedance 10Ω). Voltage variations may be noted due to normal production tolerances.
- Signal path.
  - ⊳ : PB (DECK A)
  - ▷ : PB (DECK B)
  - ▷› : REC (DECK B)

7-16. SCHEMATIC DIAGRAM
• DECK SECTION (HCD-C50U)


[TC MAIN (U) BOARD]
A DECK
L CH
R CH
HP901 PLAY BACK HEAD
B DECK
HRP901 REC/PLAYBACK HEAD
HE901 ERASE HEAD
IC301 PB EQ AMP (DECK A)
IC302 PB EQ AMP (DECK B)
IC303 HEAD SELECT SWITCH
IC304 REC EQ AMP/ DOLBY NR
IC351 TRIGGER MOTOR DRIVER
IC361 MECHA CONTROL
IC309 RESET
Q241,291 MUTING
Q391 MUTE SWITCH
Q303 BIAS REG
Q301, 302 BIAS OSC
Q355,356 TRIGGER H/L SWITCH
Q351,352 CAPSTAN H/L SWITCH
Q353 CAPSTAN SWITCH
Q354 CAPSTAN SWITCH
Q361 BUFFER
Q365 INVERTER
Q801 REG
Q901-903 INVERTER
PB LEVEL (L) (DECK A)
PB LEVEL (R) (DECK A)
PB LEVEL (L) (DECK B)
PB LEVEL (R) (DECK B)
REC LEVEL (L)
REC LEVEL (R)
RECORD BIAS
PB (A) L
PB (A) R
PB (B) R
[LEAF SWITCH (B) BOARD]
M902 TRIGGER MOTOR
TRG M+
TRG M-
M901 CAPSTAN MOTOR
+5V
SPEED
-7V
[LEAF SWITCH (A) BOARD]
DECK A
DECK B
S1007 STOP
S1002 70μ/120μ
S1001 HALF
Q1001 ROTATION DET
S1008 STOP
S1004 70μ/120μ
S1003 REC CLAW
S1005 HALF
Q1002 NJL5165K ROTATION DET
+5V
B STOP
B SHUT
A SHUT
METAL
A STOP
GND
A HALF
70/120 (A DECK)
B HALF
REC CLAW
70/120 (B DECK)
MOTOR GND
-7.5V
+7.5V
POWER BOARD CN31
(See Page 55)
NC
REC-L
PB-L
GND
PB-R
REC-R
-7.5V
+7.5V
AUDIO BUS
POWER IN
DIGITAL GND
DIGITAL +5.6V
NC
POWER BOARD CN911
(See Page 55)
X361 4MHz
[TC SW (U) BOARD]
CN362 11P
DECK A
DECK B
DOLBY NR
ON — OFF
HIGH SPEED DUBBING
D904 (● REC)
D901 (▷)
D902 (▷)
D903 (II PAUSE)
D905 (HIGH SPEED DUBBING)
INVERTER
CONPARATOR
SW R1
GND
SW P1
CONT
GND
Vcc
SW P2
GND
SW R2
T.S.D
O.C.P
MOTOR DRIVE
MOTOR DRIVE
FWD/REV/STOP CONTROL LOGIC
GND
MOTOR DRIVE
NOISE FILTER
CLAMP
FWD.IN
REV.IN
VCC 1
VCC 2
NOISE FILTER
MOTOR DRIVE

• IC BLOCK DIAGRAMS

IC303 uPC1330HA-NA

IC351 LB1641

Note:

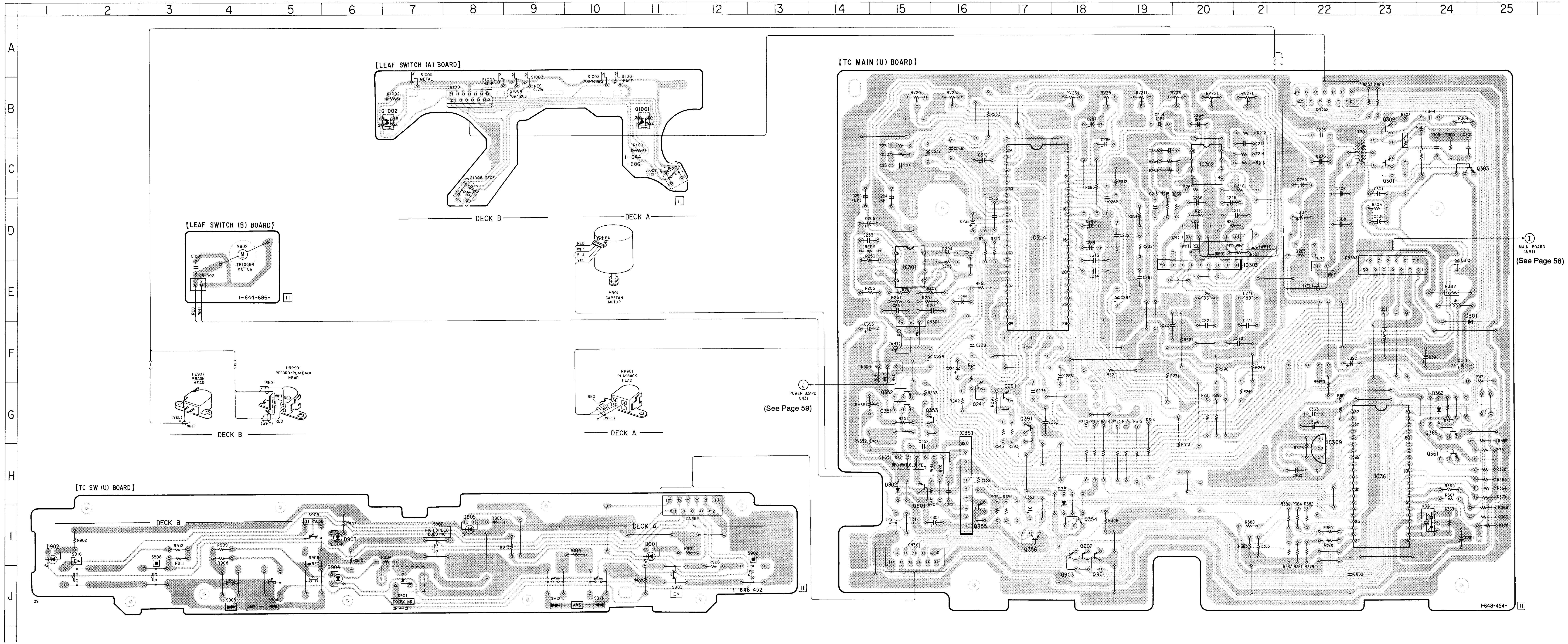
- All capacitors are in μF unless otherwise noted. pF:μμF 50WV or less are not indicated except for electrolytics and tantalums.
- All resistors are in Ω and 1/4W or less unless otherwise specified.
- Δ : internal component.
- : fusible resistor.

Note: The components identified by mark ⚠ or dotted line with mark ⚠ are critical for safety.
Replace only with part number specified.

- ▬▬ : B+ Line
- ▪▪▪▪▪ : B– Line
- ☐ : adjustment for repair.
- Voltage and waveforms are dc with respect to ground under no-signal conditions.
  no mark : PB
  ( ) : REC
- Voltages are taken with a VOM (Input impedance 10Ω). Voltage variations may be noted due to normal production tolerances.
- Signal path.
  - ▷ : PB (DECK A)
  - ▷ : PB (DECK B)
  - ▷ : REC (DECK B)

7-17. PRINTED WIRING BOARD

- DECK SECTION (HCD-C50U)
- See page 32 for Circuit Boards Location and see page 97, 98 for Semiconductor Lead Layouts.


1
2
3
4
5
6
7
8
9
10
11
12
13
14
15
16
17
18
19
20
21
22
23
24
25
A
B
C
D
E
F
G
H
I
J
[LEAF SWITCH (A) BOARD]
S1006 METAL
S1005 HALF
S1003 REC CL ON
S1004 70μ/120μ
S1002 70μ/120μ
S1001 HALF
CN1001
Q1001
Q1002
R1001
1-644-686-
S1007 STOP
S1008 STOP
DECK B
DECK A
[LEAF SWITCH (B) BOARD]
M902 TRIGGER MOTOR
CN1002
M901 CAPSTAN MOTOR
HE901 ERASE HEAD
HRP901 RECORD/PLAYBACK HEAD
HP901 PLAYBACK HEAD
[TC MAIN (U) BOARD]
IC301
IC302
IC303
IC304
IC309
IC351
IC361
CN352
CN353
CN354
CN351
CN301
CN321
Q301
Q302
Q303
Q351
Q352
Q353
Q354
Q355
Q356
Q361
Q365
Q391
Q291
Q241
Q801
Q901
Q902
Q903
D351
D362
D801
D802
T301
MAIN BOARD CN911
(See Page 58)
POWER BOARD CN1
(See Page 59)
1-648-454-
[TC SW (U) BOARD]
CN362
S909 PAUSE
S907 HIGH SPEED DUBBING
S906 REC
S905 AMS
S904 AMS
S901 DOLBY NR ON – OFF
S912 AMS
S913 AMS
S903
S908
S910
S902
D901
D902
D903
D904
D905
1-648-452-

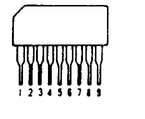
- **Semiconductor Location**

Ref. No.	Location
D351	I-18
D362	G-24
D801	F-24
D802	H-15
D901	I-11
D902	I-1
D903	I-6
D904	J-6
D905	I-8
IC301	E-15
IC302	C-20
IC303	E-20
IC304	D-18
IC309	H-22
IC351	H-16
IC361	H-23
Q241	G-16
Q291	G-17
Q301	C-23
Q302	B-23
Q303	C-24
Q351	G-15
Q352	G-15
Q353	G-16
Q354	I-18
Q355	I-16
Q356	I-17
Q361	H-24
Q365	H-24
Q391	G-17
Q801	I-15
Q901	J-19
Q902	J-18
Q903	J-18
Q1001	B-11
Q1002	B-7

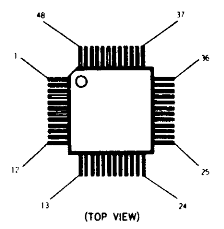
Note:
- o—— : parts extracted from the components side.
- ⁙⁙⁙ : Pattern on the side which is seen.
- △ : internal component.

7-18. SEMICONDUCTOR LEAD LAYOUTS

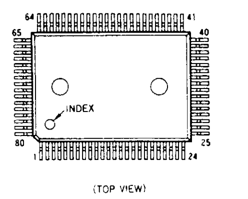
BA6418N
uPC1330HA-NA



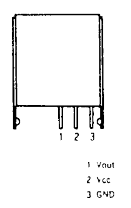
CXA1372AQ


48
37
1
36
12
25
13
24
(TOP VIEW)

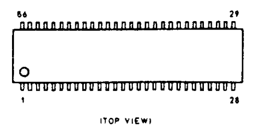
CXD2500BQ
uPD75516GF-461-3B9
uPD75517-GF-209-3B9
uPD78042-GF-033-3B9


64
41
65
40
INDEX
80
25
1
24
(TOP VIEW)

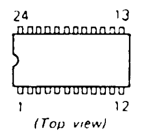
GP1U90XB


1 2 3
1 Vout
2 Vcc
3 GND

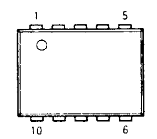
HA12171NT
HA12172NT


56
29
1
28
(TOP VIEW)

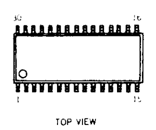
LA1831
LC7218


24
13
1
12
(Top view)

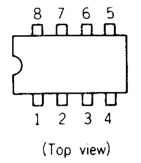
LA5601



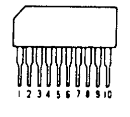
LA6532M


30
16
1
15
TOP VIEW

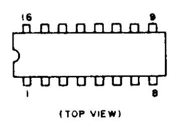
LB1639
M5218AP
uPC4570C-1


8 7 6 5
1 2 3 4
(Top view)

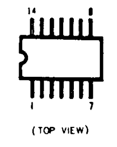
LB1641


1 2 3 4 5 6 7 8 9 10

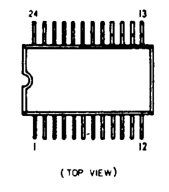
MC14052BCP
M50253P
M66312P
TC9184P


16
9
1
8
(TOP VIEW)

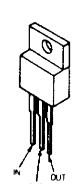
MC14066BF
MC14093BF


14
1
7
(TOP VIEW)

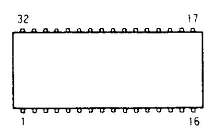
MSM6538-01GS-VKR1


24
13
1
12
(TOP VIEW)

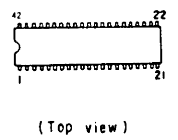
M5F78M05L
M5F78M07L



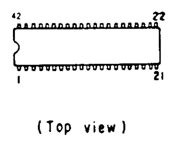
M5218AFP



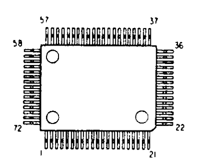
M5218AL
M5230L-A


42
22
1
21
(Top view)

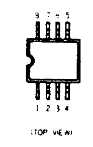
M37471M4-220SP


42
22
1
21
(Top view)

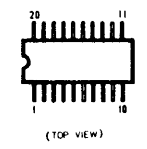
M50964-260FP


57
37
58
36
72
22
1
21

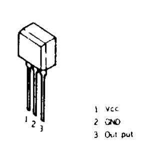
M51935BFP
uPC4570G2


8 7 6 5
1 2 3 4
(TOP VIEW)

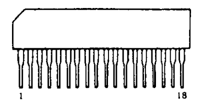
PCM-67U-B


20
11
1
10
(TOP VIEW)

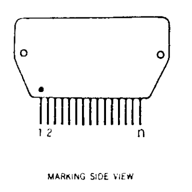
PST572E


1 2 3
1 Vcc
2 GND
3 Out put

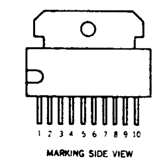
RBA-402



STK-4132MK2
STK-4142MK2


1 2
n
MARKING SIDE VIEW

TA7272P


1 2 3 4 5 6 7 8 9 10
MARKING SIDE VIEW

uPD4066BC

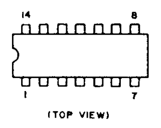
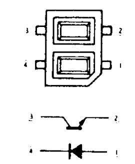
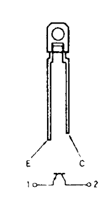

14
8
1
7
(TOP VIEW)

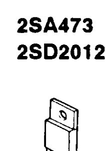
PHOTO REFLECTOR
NJL5165K-A
PHONT REFLECTOR
NJL5165K-B (H1)



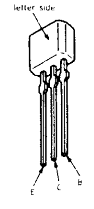
TPS626



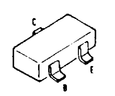
2SA473
2SD2012



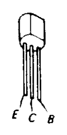
2SA1175-HFE
2SC2785-HFE
2SC3623A-LK
DTA124ES
DTC144ES


letter side
E
C
B

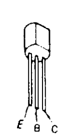
2SA1235-F
2SA1602-F
2SC4154-F
DTC144EK



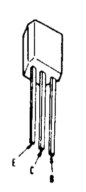
2SB1013-4
2SC3112-A
2SC945-P
2SD1387-3



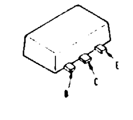
2SB1116-K



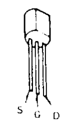
2SC2603-EF
2SC2724-CD
DTA114ES
DTA144ES
DTC114ES
DTC124ES



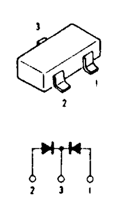
2SD1622-S



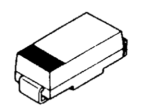
2SK246-GR3
2SK246-Y



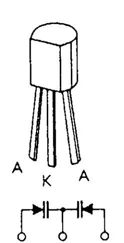
DCB010



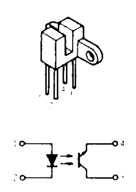
EC10DS2



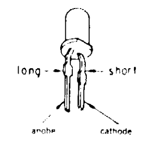
KV1560N



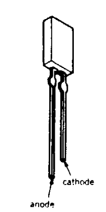
ON1023-S



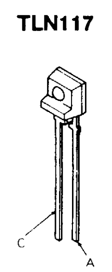
SEL2210S-C
SEL2210S-CD
SEL2410E-C-TP6
SEL3510C-CD


long
short
anode
cathode

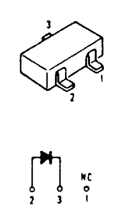
SEL4225C-C
SEL4925A-D


cathode
anode

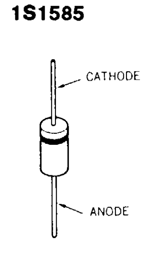
TLN117



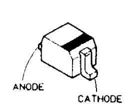
MA3068-L



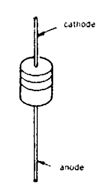
1N4148M
1S1585


CATHODE
ANODE

1SS352


ANODE
CATHODE

11ES2
HZS30-2L
HZS6A1L
HZS9A2L
UZL-6L3
UZL-12M1
UZP-5.6B


cathode
anode

SECTION 8
EXPLODED VIEWS

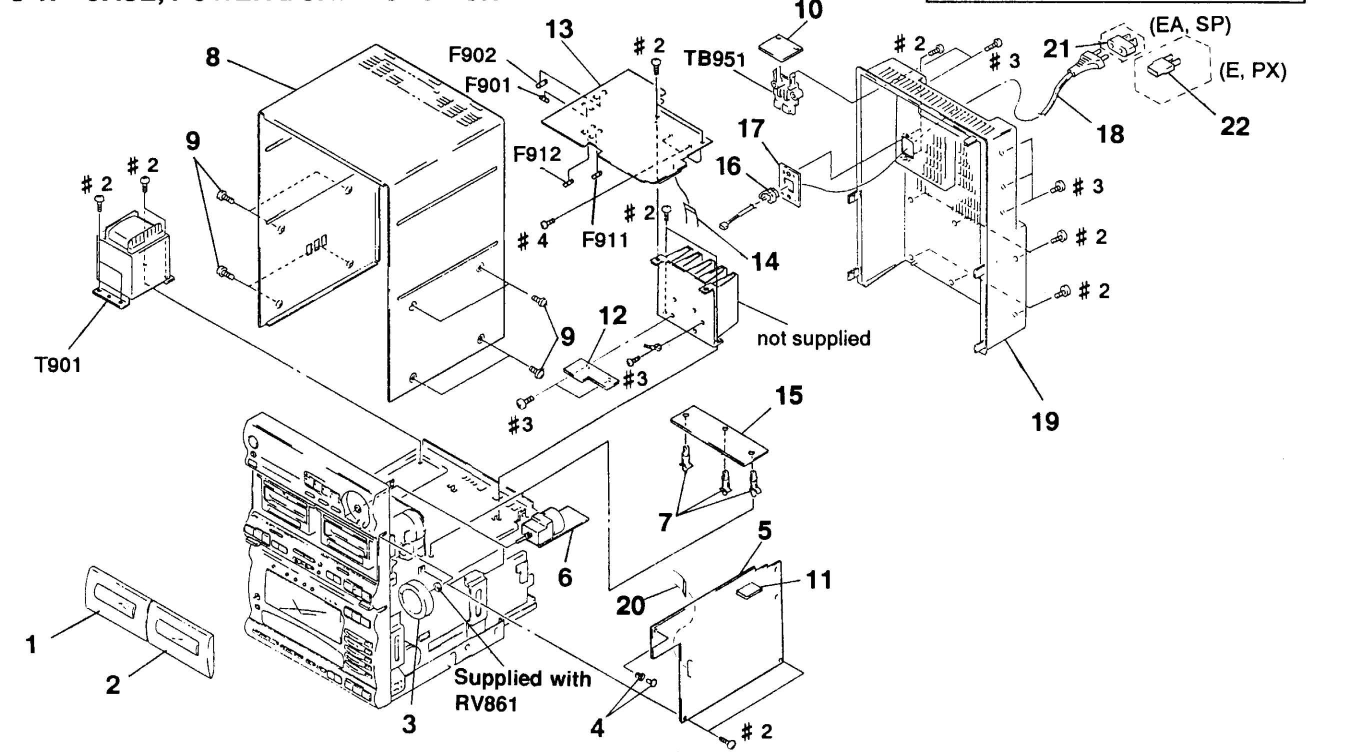
NOTE:

- -XX, -X mean standardized parts, so they may have some difference from the original one.
- Color Indication of Appearance Parts
  Example:
  KNOB, BALANCE (WHITE) . . . (RED)
  ↑ Parts color ↑ Cabinet's color
- Hardware (# mark) list is given in the last of this parts list.
- Items marked " ∗ " are not stocked since they are seldom required for routine service. Some delay should be anticipated when ordering these items.
- The mechanical parts with no reference number in the exploded views are not supplied.
- CND : Canadian model
- G : German model
- IT : Italian model
- EE : East European model
- EA : Saudi Arabia model
- AUS : Australian model
- SP : Singapore model

The components identified by mark ⚠ or dotted line with mark ⚠ are critical for safety.
Replace only with part number specified.

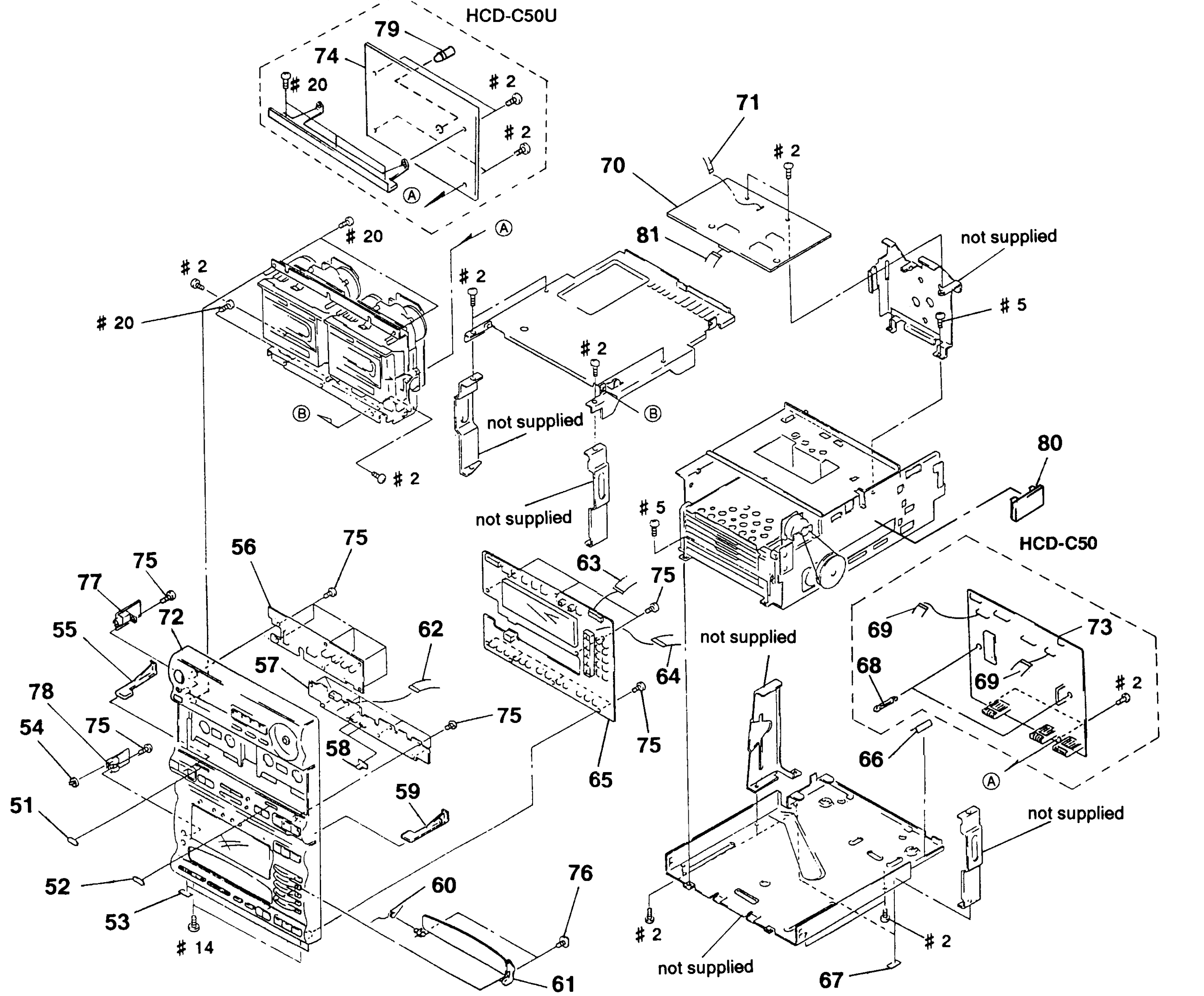
Les composants identifiés par une marque ⚠ sont critiques pour la sécurité.
Ne les remplacer que par une piéce portant le numéro spécifié.

8-1. CASE, POWER BOARD SECTION


8
F902
F901
13
# 2
TB951
10
# 2
# 3
21
(EA, SP)
(E, PX)
22
18
9
# 2
# 2
F912
17
16
# 4
F911
# 2
14
# 3
# 3
# 2
# 2
12
# 3
not supplied
19
T901
15
7
5
11
6
20
1
2
3
Supplied with RV861
4
# 2

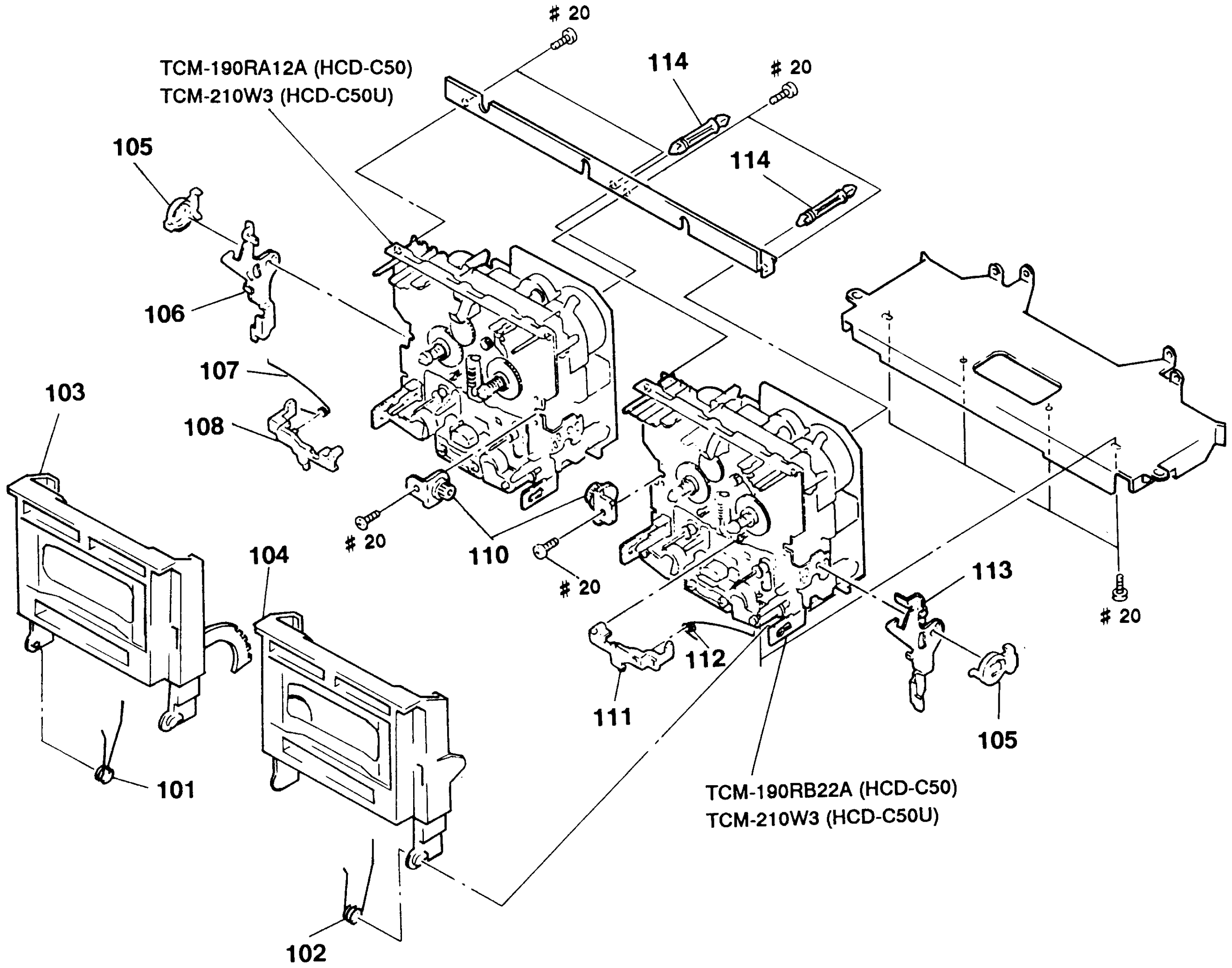
Ref. No.	Part No.	Description	Remark
1	X-4943-772-1	LID (L) ASSY, CASSETTE (C50U)	
1	X-4943-803-1	LID (L) ASSY, CASSETTE (C50)	
2	X-4943-773-1	LID (R) ASSY, CASSETTE (C50U)	
2	X-4943-802-1	LID (R) ASSY, CASSETTE (C50)	
3	X-4943-774-1	KNOB (VOLUME) ASSY	
4	4-812-134-00	RIVET NYLON, 3.5	
∗ 5	A-4360-827-A	MAIN BOARD, COMPLETE (C50:CND/C50U)	
∗ 5	A-4360-960-A	MAIN BOARD, COMPLETE (C50:IT, G)	
∗ 5	A-4360-964-A	MAIN BOARD, COMPLETE (C50:AEP, UK)	
∗ 5	A-4360-976-A	MAIN BOARD, COMPLETE (C50:E, EA, AUS, SP, PX)	
∗ 5	A-4365-148-A	MAIN BOARD, COMPLETE (C50:EE)	
∗ 6	1-648-412-11	VR BOARD	
∗ 7	4-954-051-51	HOLDER, PC BOARD	
∗ 8	4-959-242-01	CASE	
9	3-363-099-01	SCREW (CASE 3 TP2)	
∗ 10	1-648-413-11	ST. TM BOARD	
∗ 11	1-648-414-11	SW BOARD (C50:AEP, UK, IT, G, EE)	
∗ 12	1-648-807-11	TRANSISTOR BOARD	
∗ 13	A-4360-826-A	POWER BOARD, COMPLETE (C50U)	
∗ 13	A-4360-963-A	POWER BOARD, COMPLETE (C50:AEP, UK, IT, G, EE)	
∗ 13	A-4360-975-A	POWER BOARD, COMPLETE (C50:E, EA, SP, PX)	
∗ 13	A-4360-979-A	POWER BOARD, COMPLETE (C50:CND)	
∗ 13	A-4365-709-A	POWER BOARD, COMPLETE (C50:AUS)	
14	1-534-517-00	WIRE (FLAT TYPE)(13 CORE)(C50U)	
14	1-690-590-31	WIRE, FLAT TYPE (13 CORE)(C50)	
∗ 15	1-648-763-11	KARAOKE RELAY BOARD	
∗ 16	3-703-244-00	BUSHING (2104), CORD (C50:CND, AEP, UK, IT, G, EE, EA, AUS, SP/C50U)	
∗ 16	3-703-571-11	BUSHING (S)(4516), CORD (C50:E, PX)	
∗ 17	4-959-236-01	BRACKET (C-H)	
⚠18	1-574-902-11	CORD, POWER (C50:E, PX)	
⚠18	1-590-083-11	CORD, POWER (C50:AUS)	
⚠18	1-696-169-11	CORD, POWER (AEP) (C50:AEP, IT, G, EE, EA, SP)	
⚠18	1-696-570-21	CORD, POWER (C50:UK)	
⚠18	1-751-586-11	CORD, POWER (C50:CND/C50U)	
∗ 19	4-959-239-01	PANEL, BACK (C50:CND/C50U)	
∗ 19	4-959-239-11	PANEL, BACK (C50:AEP, UK, IT, G, EE, AUS)	
∗ 19	4-959-239-21	PANEL, BACK (C50:E, EA, SP, PX)	
20	1-696-804-21	WIRE (FLAT TYPE)(19 CORE)	
⚠21	1-569-008-11	ADAPTER, CONVERSION 2P (C50:EA, SP)	
⚠22	1-569-007-11	ADAPTER, CONVERSION 2P (C50:E, PX)	
⚠F901	1-532-078-00	FUSE (T1A)(C50:E, EA, AUS, SP, PX)	
⚠F901	1-532-215-00	FUSE (T800mA)(C50:AEP, UK, IT, G, EE)	
⚠F901	1-576-103-11	FUSE (1.6A)(C50:CND/C50U)	
⚠F902	1-532-279-00	FUSE (T500mA)(C50:E, EA, SP, PX)	
⚠F911	1-532-203-00	FUSE (T2A)(C50:EXCEPT CND)	
⚠F911	1-576-104-11	FUSE (2A)(C50:CND/C50U)	
⚠F912	1-532-203-00	FUSE (T2A)(C50:EXCEPT CND)	
⚠F912	1-576-104-11	FUSE (2A)(C50:CND/C50U)	
⚠T901	1-423-710-11	TRANSFORMER, POWER (C50U)	
⚠T901	1-423-711-11	TRANSFORMER, POWER (C50:AEP, IT, G, EE)	
⚠T901	1-423-712-11	TRANSFORMER, POWER (C50:UK)	
⚠T901	1-423-713-11	TRANSFORMER, POWER (C50:E, EA, AUS, PX)	
⚠T901	1-423-752-11	TRANSFORMER, POWER (C50:SP)	
⚠T901	1-423-753-11	TRANSFORMER, POWER (C50:CND)	
∗ TB951	1-537-240-21	TERMINAL BOARD (CHECKER PIN)(SPEAKER)	

8-2. FRONT PANEL, PC BOARD SECTION


HCD-C50U
79
74
# 20
# 2
# 2
71
70
# 2
# 20
# 2
# 20
81
not supplied
# 5
# 2
# 2
# 2
not supplied
not supplied
80
HCD-C50
56
75
77
75
72
55
62
63
75
69
73
68
69
# 2
not supplied
64
78
54
75
57
58
65
66
59
51
not supplied
52
60
53
# 14
76
61
# 2
not supplied
67
Ⓐ
Ⓑ

Ref. No.	Part No.	Description	Remark
51	4-959-222-01	LID (AZIMUTH L)(C50)	
52	4-959-221-01	LID (AZIMUTH R)(C50)	
53	4-930-336-11	FOOT (FELT)	
54	4-932-882-11	KNOB (HP. VOL)(C50:EXCEPT CND)	
55	4-959-210-01	BUTTON (EJECT-L)	
∗ 56	A-4360-951-A	FUNC BOARD, COMPLETE (C50U)	
∗ 56	A-4360-974-A	FUNC BOARD, COMPLETE (C50)	
∗ 57	A-4360-950-A	TC. SW BOARD, COMPLETE (C50U)	
∗ 57	A-4360-973-A	TC. SW BOARD, COMPLETE (C50)	
58	4-959-223-01	KNOB	
59	4-959-288-01	BUTTON (EJECT-R)	
60	4-959-207-01	SPRING (CLOSE)	
61	4-959-206-01	LID (LOADING)	
62	1-575-784-11	WIRE (FLAT TYPE)(11 CORE)(C50U)	
62	1-690-065-11	WIRE, FLAT TYPE (15 CORE)(C50)	
63	1-690-319-11	WIRE, FLAT TYPE (11 CORE)	
64	1-575-906-11	WIRE, FLAT TYPE (15 CORE)	
∗ 65	A-4360-946-A	DISPLAY BOARD, COMPLETE (C50:CND/C50U)	
∗ 65	A-4360-962-A	DISPLAY BOARD, COMPLETE (C50:G)	
∗ 65	A-4360-971-A	DISPLAY BOARD, COMPLETE (C50:AEP, UK)	
∗ 65	A-4360-978-A	DISPLAY BOARD, COMPLETE (C50:E, EA, AUS, SP, PX)	
∗ 65	A-4365-147-A	DISPLAY BOARD, COMPLETE (C50:IT)	
∗ 65	A-4365-149-A	DISPLAY BOARD, COMPLETE (C50:EE)	
66	3-831-441-XX	CUSHION (B), CABINET	
67	4-930-336-21	FOOT (FELT)(C50:UK, IT, EE, EA, AUS, SP)	
67	4-930-336-31	FOOT (FELT) (C50:CND, AEP, G, E, PX/C50U)	
∗ 68	3-349-025-41	HOLDER, PC BOARD (C50:EXCEPT CND/C50U)	
∗ 68	3-350-847-41	HOLDER, PCB (C50:CND)	
69	1-696-725-11	WIRE (FLAT TYPE)(9 CORE)(C50)	
∗ 70	A-4360-947-A	CD. MAIN BOARD, COMPLETE	
71	1-590-209-11	WIRE (FLAT TYPE)(7 CORE)	
72	X-4943-768-1	PANEL ASSY, FRONT (C50U)	
72	X-4943-769-1	PANEL ASSY, FRONT (C50:CND)	
72	X-4943-770-1	PANEL ASSY, FRONT (C50:AEP, UK, IT, G, EE)	
72	X-4943-771-1	PANEL ASSY, FRONT (C50:E, EA, AUS, SP, PX)	
∗ 73	A-4360-972-A	TC. MAIN BOARD, COMPLETE (C50)	
∗ 74	A-4360-949-A	TC. MAIN BOARD, COMPLETE (C50U)	
75	4-951-620-01	SCREW (2.6X8), +BVTP	
76	4-933-134-01	SCREW (+PTPWH M2.6X6)	
∗ 77	1-648-416-11	HP BOARD	
∗ 78	1-648-415-11	MIC BOARD (C50:EXCEPT CND)	
79	4-962-265-01	HOLDER, PC BOARD (EXCEPT PX/C50U)	
80	4-962-178-01	HOLDER (FLEXIBLE)	
81	1-696-727-11	WIRE (FLAT TYPE)(15 CORE)	

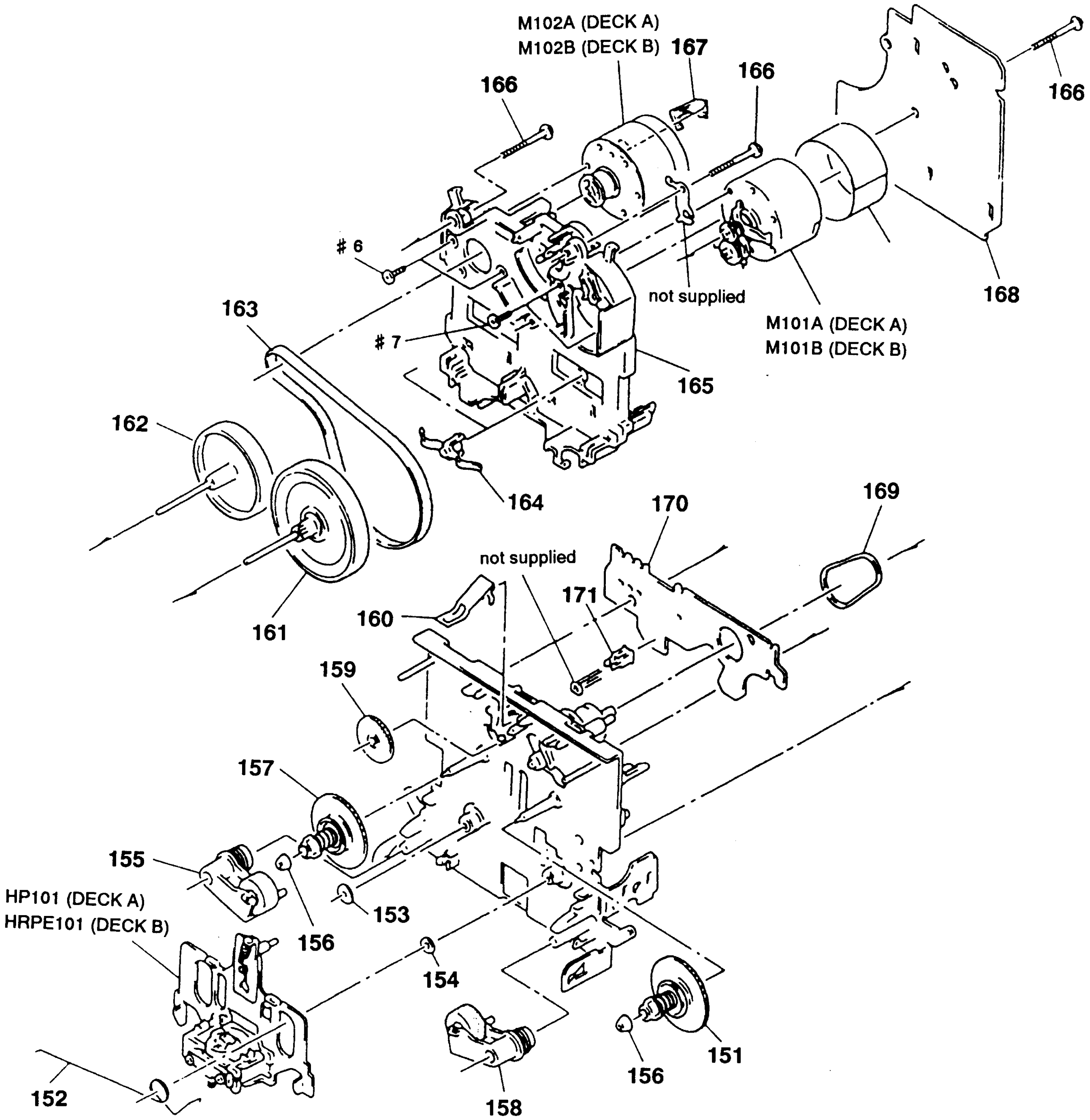
8-3. CASSETTE HOLDER SECTION



# 20
TCM-190RA12A (HCD-C50)
TCM-210W3 (HCD-C50U)
114
# 20
114
105
106
107
103
108
# 20
110
104
# 20
113
# 20
112
111
105
101
TCM-190RB22A (HCD-C50)
TCM-210W3 (HCD-C50U)
102

Ref. No.	Part No.	Description	Remark
101	4-959-231-01	SPRING (L), TORSION (C50)	
102	4-959-232-01	SPRING (R), TORSION (C50)	
103	X-4943-776-1	HOLDER (L) ASSY, CASSETTE (C50)	
104	X-4943-775-1	HOLDER (R) ASSY, CASSETTE (C50)	
105	3-354-957-01	JOINT (LOCK LEVER)	
* 106	3-367-709-01	LEVER (LOCK LEVER L)	
107	3-354-961-01	SPRING (EJ SAFTY SPRING L)(C50)	
108	3-354-955-01	LEVER (EJ SAFTY LEVER L)(C50)	
110	3-354-963-01	DAMPER (C50)	
111	3-354-956-01	LEVER (EJ SAFTY LEVER R)(C50)	
112	3-354-962-01	SPRING (EJ SAFTY SPRING R)(C50)	
* 113	3-367-710-01	LEVER (LOCK LEVER R)	
* 114	3-682-419-21	HOLDER, P.C.B (C50)	

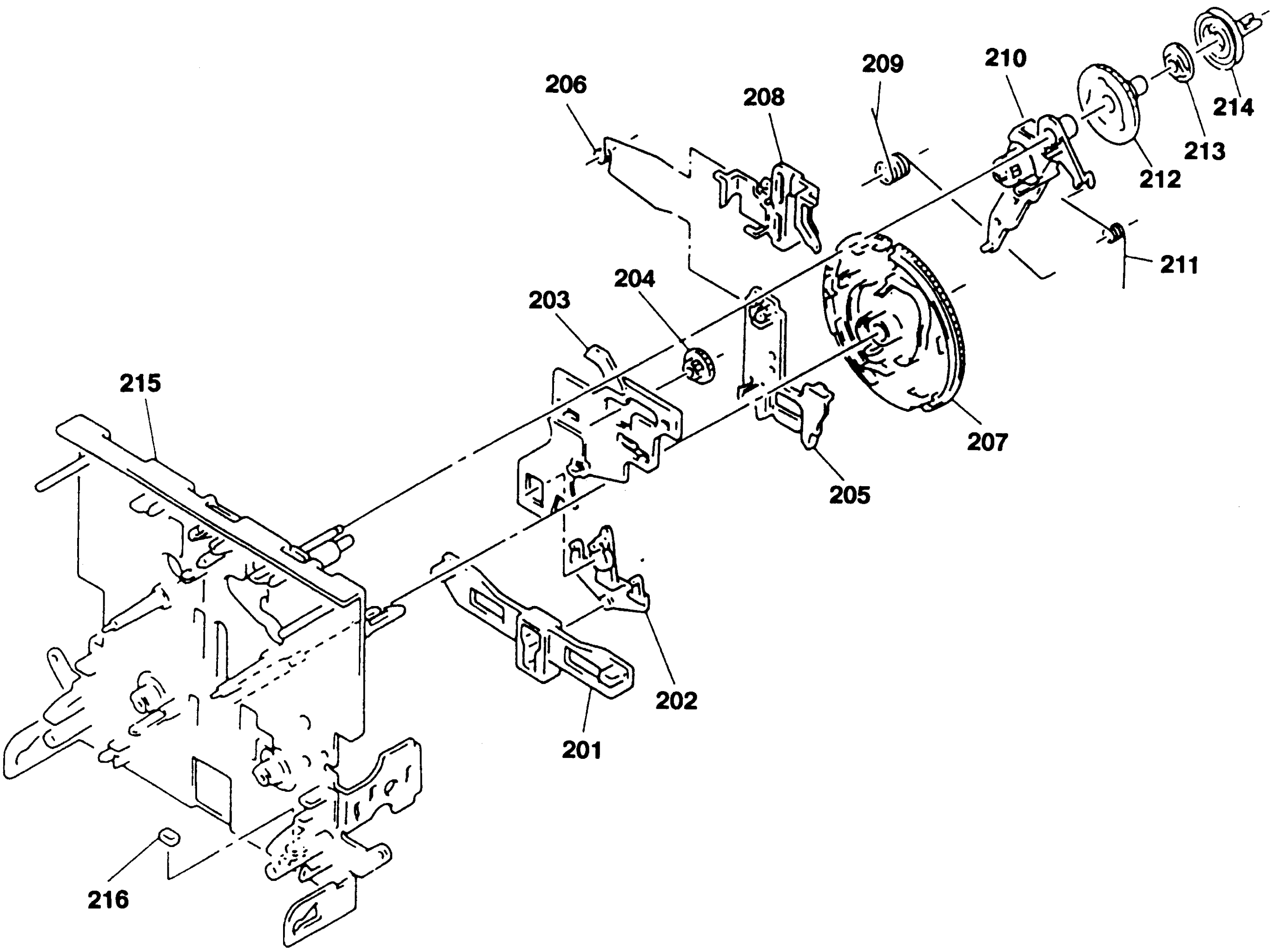
8-4. MECHANISM DECK SECTION 1 (HCD-C50)
(DECK A: TCM-190RA12A/DECK B: TCM-190RB22A)


M102A (DECK A)
M102B (DECK B)
167
166
166
166
#6
163
#7
not supplied
168
M101A (DECK A)
M101B (DECK B)
165
162
164
170
169
not supplied
171
160
161
159
157
155
HP101 (DECK A)
HRPE101 (DECK B)
153
156
154
151
156
152
158

Ref. No.	Part No.	Description	Remark
151	X-3359-404-1	TABLE ASSY, REEL (C50)	
152	3-359-455-01	SPRING, TORSION (C50)	
153	3-356-714-01	WASHER (C50)	
154	3-356-713-01	WASHER (C50)	
155	X-3359-409-1	LEVER (PINCH LEVER REV) ASSY (C50)	
156	3-362-308-01	CAP (REEL)(C50)	
157	X-3362-078-1	TABLE ASSY (B), REEL (C50)	
158	X-3359-408-1	LEVER (PINCH LEVER FWD) ASSY (C50)	
159	3-359-424-01	GEAR (REV GEAR)(C50)	
160	3-359-430-01	SPRING(CASSETTE RETAINER), LEAF (C50)	
161	X-3359-406-1	FLYWHEEL (FWD) ASSY (C50)	
162	X-3359-410-1	FLYWHEEL (REV) ASSY (C50)	
163	3-359-417-01	BELT (FLAT), CAPSTAN (C50)	
164	3-575-321-00	RETAINER, THRUST, CAPSTAN (C50)	
* 165	3-359-436-01	BASE (THRUST RETAINER), FITTING (C50)	

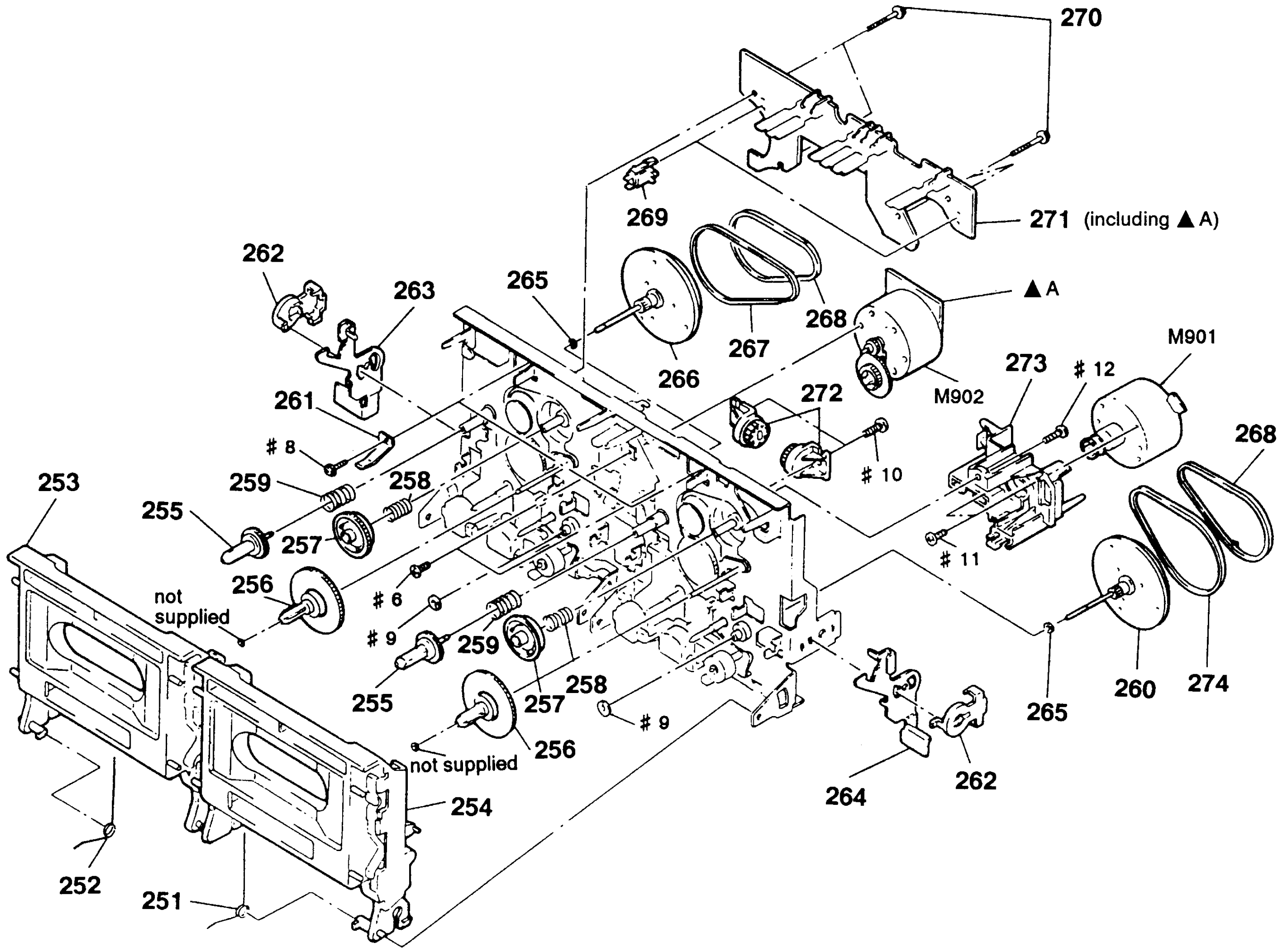
Ref. No.	Part No.	Description	Remark
166	3-359-414-01	SCREW (+PTPWH 2X23)(C50)	
167	1-638-983-11	MOTOR FLEXIBLE BOARD (C50)	
* 168	A-2006-399-A	MD-A BOARD, COMPLETE (C50)	
* 168	A-2006-400-A	MD-B BOARD, COMPLETE (C50)	
169	3-359-466-01	BELT (FR), SQUARE (C50)	
170	1-634-841-14	SW-A BOARD (RA12A)(C50)	
170	1-634-841-14	SW-B BOARD (RB22A)(C50)	
HP101	A-2003-837-F	DECK ASSY, HEAD (DECK A)(C50)	
HRPE101	A-2003-838-F	DECK ASSY, HEAD (DECK B)(C50)	
M101A	X-3363-501-1	MOTOR, REEL ASSY (DECK A)(C50)	
M101B	X-3363-501-1	MOTOR, REEL ASSY (DECK B)(C50)	
M102A	X-3365-377-1	MOTOR, CAPSTAN ASSY (DECK A)(C50)	
M102B	X-3365-377-1	MOTOR, CAPSTAN ASSY (DECK B)(C50)	

8-5. MECHANISM DECK SECTION 2 (HCD-C50)
(DECK A: TCM-190RA12A/DECK B: TCM-190RB22A)



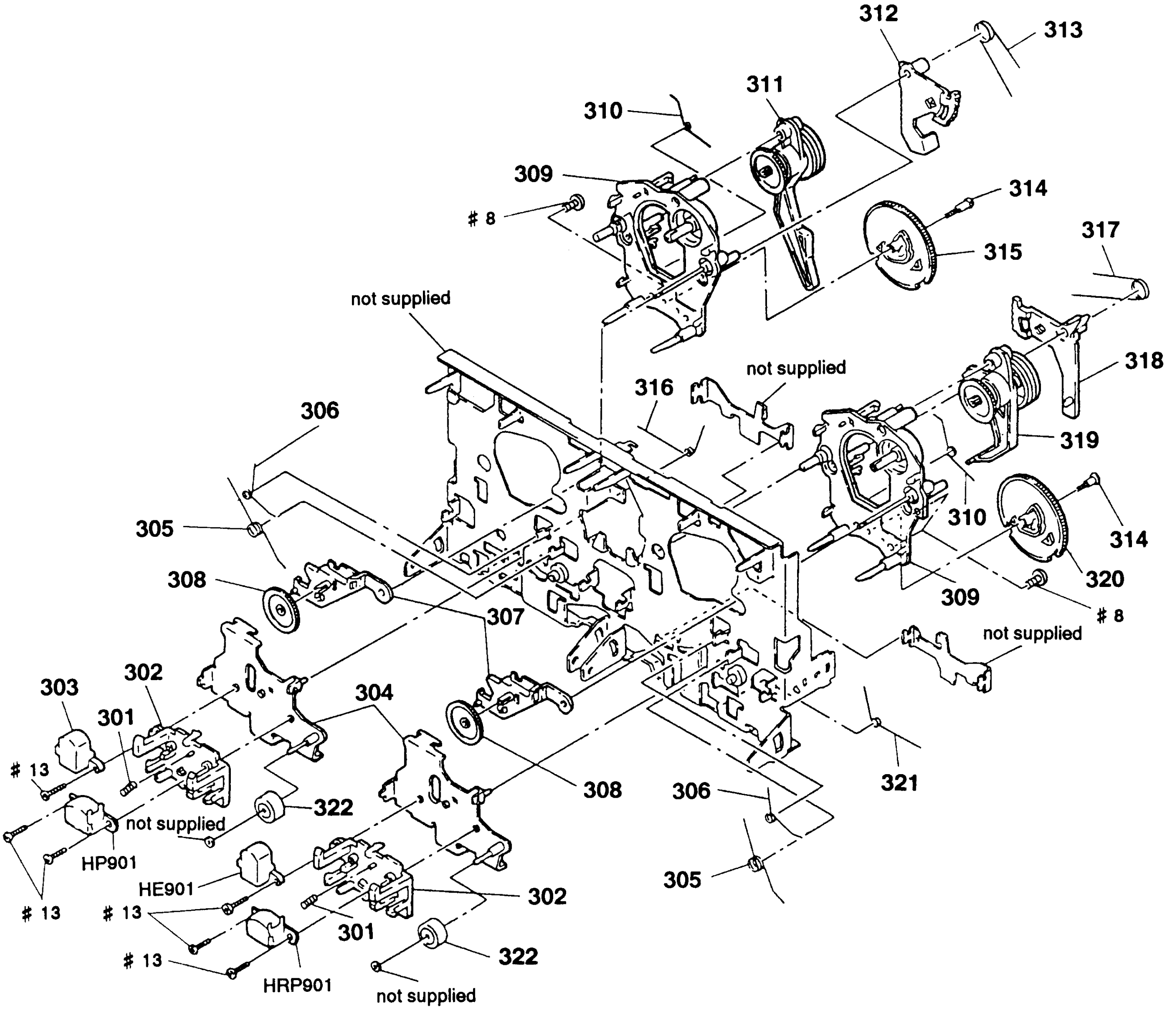
Ref.No.	Part No.	Description	Remark
* 201	3-359-425-01	SLIDER (REVERSE SLIDER)(C50)	
202	3-359-426-01	LEVER (REVERSE LEVER)(C50)	
* 203	3-359-415-01	SLIDER (TRIGGER SLIDER)(C50)	
204	3-359-448-01	GEAR (TRIGGER)(C50)	
* 205	3-359-427-01	SLIDER (LEVERSE SLIDER)(C50)	
206	3-359-454-01	SPRING, TORSION (C50)	
207	3-359-420-01	GEAR (CAM GEAR)(C50)	
208	3-359-429-01	SLIDER (BRAKE PLATE)(C50)	
209	3-359-456-01	SPRING(TRIGGER SPRING),TORSION (C50)	
210	X-3359-405-1	LEVER (FR ARM) ASSY (C50)	
211	3-359-453-01	SPRING (FR ARM), TORSION (C50)	
212	3-359-419-01	GEAR (FR GEAR)(C50)	
213	3-359-421-01	CLUTCH (REEL DISK)(C50)	
214	3-359-418-01	PULLEY (FR PULLEY)(C50)	
215	X-3363-790-1	CHASSIS, MECHANICAL ASSY (C50)	
216	3-359-469-01	SPACER (C50)	

8-6. MECHANISM DECK SECTION 3 (HCD-C50U) (TCM-210W3)


270
271 (including ▲A)
269
262
263
265
268
▲A
267
266
M901
273
# 12
272
M902
261
# 8
268
253
259
258
# 10
255
257
# 11
256
not supplied
# 6
# 9
259
258
255
257
260
274
265
# 9
256
not supplied
254
264
262
252
251

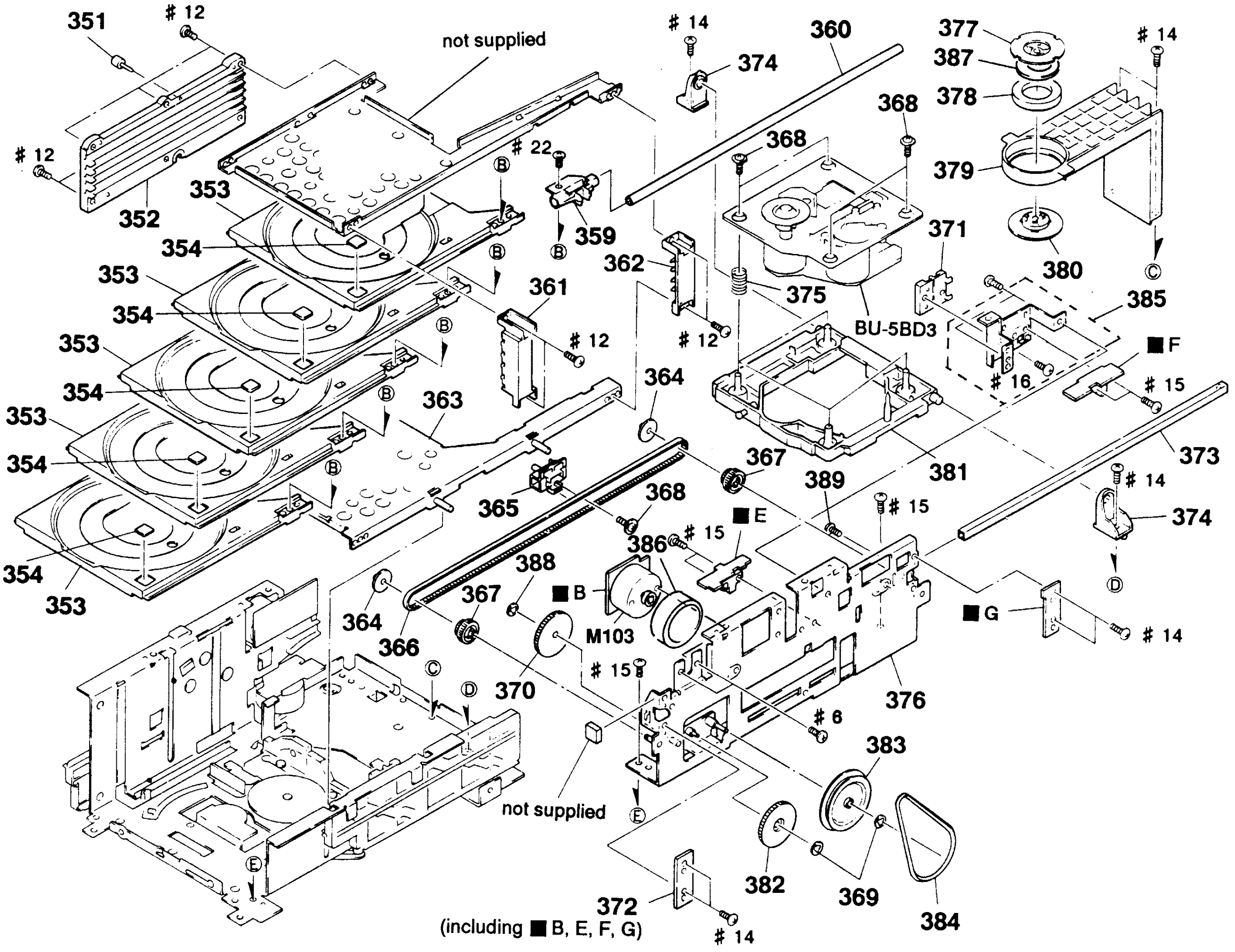
Ref. No.	Part No.	Description	Remark
251	3-381-788-01	SPRING (LOADING B), TORSION (C50U)	
252	3-381-787-01	SPRING (LOADING A), TORSION (C50U)	
253	X-3365-440-1	HOLDER (A) ASSY, CASSETTE (C50U)	
254	X-3365-441-1	HOLDER (B) ASSY, CASSETTE (C50U)	
255	3-382-524-01	GEAR (S SIDE REEL) (C50U)	
256	X-3365-559-1	TABLE (T) ASSY, REEL (C50U)	
257	X-3365-447-1	GEAR (FF) ASSY (C50U)	
258	3-382-078-01	SPRING (FF), COMPRESSION (C50U)	
259	3-358-208-01	SPRING (SUPPLY), COMPRESSION (C50U)	
260	X-3365-438-1	FLYWHEEL (B) ASSY (C50U)	
261	3-382-929-01	SPRING (CASSETTE DETENT), LEAF (C50U)	
262	3-354-957-01	JOINT (LOCK LEVER)	
* 263	3-367-709-01	LEVER (LOCK LEVER L)	
* 264	3-367-710-01	LEVER (LOCK LEVER R)	
265	3-701-437-21	WASHER (C50U)	
266	X-3365-437-1	FLYWHEEL (A) ASSY (C50U)	
267	3-382-859-02	BELT (CAPSTAN A) (C50U)	
268	4-928-951-01	BELT (CAPSTAN) (C50U)	
269	3-381-776-01	HOLDER (LED) (C50U)	
270	3-355-801-01	SCREW (BTP 2X18) (C50U)	
* 271	1-644-686-21	LEAF SWITCH BOARD (A, B) (C50U)	
272	4-919-393-31	DAMPER (C50U)	
273	3-381-777-01	BRACKET (C50U)	
274	3-382-860-02	BELT (CAPSTAN B) (C50U)	
M901	X-3362-377-1	MOTOR (WH) ASSY (CAPSTAN) (C50U)	
M902	A-2004-188-A	MOTOR ASSY, DC (TRIGGER) (C50U)	

8-7. MECHANISM DECK SECTION 4 (HCD-C50U) (TCM-210W3)


312
313
311
310
309
# 8
314
317
315
not supplied
318
not supplied
316
306
319
305
310
314
320
308
309
# 8
307
not supplied
303
302
304
301
# 13
322
not supplied
HP901
308
306
321
HE901
302
305
# 13
# 13
301
322
# 13
HRP901
not supplied

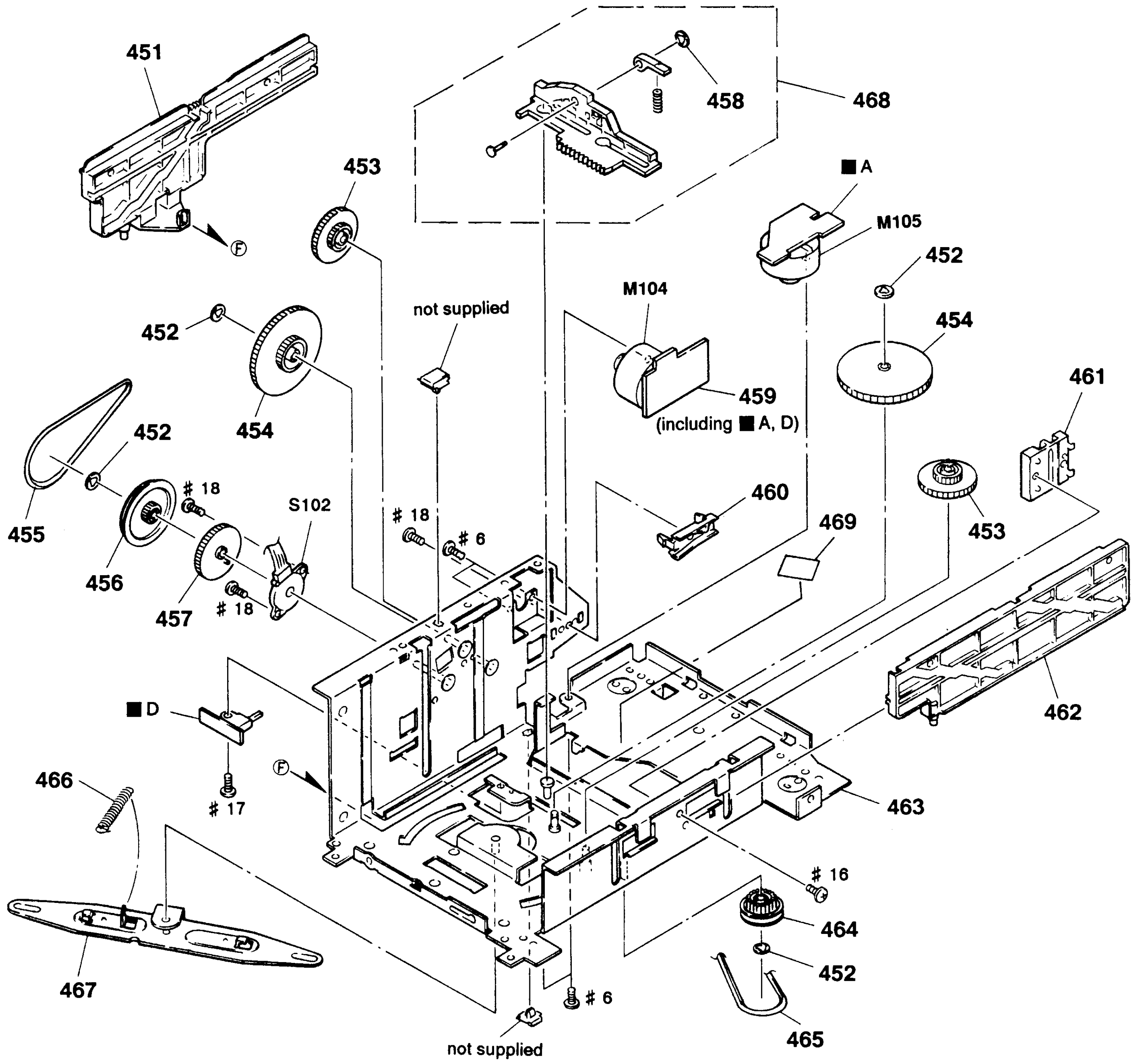
Ref. No.	Part No.	Description	Remark
301	3-343-484-01	SPRING, COMPRESSION (C50U)	
302	3-381-778-01	HOLDER (HEAD) (C50U)	
303	3-319-716-01	GUIDE, TAPE (C50U)	
304	X-3365-814-1	SLIDER (HEAD) ASSY (C50U)	
305	3-382-076-01	SPRING (HEAD), TORSION (C50U)	
306	3-382-077-01	SPRING (TU), TORSION (C50U)	
307	3-381-785-01	LEVER (TU) (C50U)	
* 308	3-358-284-01	GEAR (TU GEAR) (C50U)	
* 309	X-3365-443-1	CHASSIS (M) ASSY (C50U)	
310	3-383-498-01	SPRING (CAM), TORSION (C50U)	
311	X-3365-444-1	LEVER (FR ARM A) ASSY (C50U)	
312	3-381-781-01	LEVER (TRIGGER A) (C50U)	
313	3-382-074-01	SPRING (TRIGGER A), TORSION (C50U)	
314	3-381-810-01	SCREW, STEP (C50U)	
315	3-381-779-01	CAM (A) (C50U)	
316	3-383-056-02	SPRING (SLIDER A), TORSION (C50U)	
317	3-382-075-01	SPRING (TRIGGER B), TORSION (C50U)	
318	3-381-782-01	LEVER (TRIGGER B) (C50U)	
319	X-3365-445-1	LEVER (FR ARM B) ASSY (C50U)	
320	3-381-780-01	CAM (B) (C50U)	
321	3-383-057-02	SPRING (SLIDER B), TORSION (C50U)	
322	3-355-808-21	PINCH ROLLER (C50U)	
HE901	1-543-673-11	HEAD, MAGNETIC (ERASE) (C50U)	
HP901	1-543-940-11	HEAD, MAGNETIC (PLAYBACK) (C50U)	
HRP901	1-543-319-11	HEAD, MAGNETIC (REC/PB) (C50U)	

8-8. CD MECHANISM SECTION 1
(CDM23B-5BD3)


351
# 12
not supplied
# 22
Ⓑ
# 14
374
360
377
387
378
368
368
379
371
380
Ⓒ
385
352
353
354
359
362
361
# 12
# 12
375
BU-5BD3
■F
# 16
# 15
373
364
363
367
381
389
# 14
374
Ⓓ
365
368
# 15
■E
386
# 15
388
■B
M103
367
364
366
370
# 15
■G
# 14
376
# 6
383
not supplied
Ⓔ
382
369
384
372
(including ■ B, E, F, G)
# 14

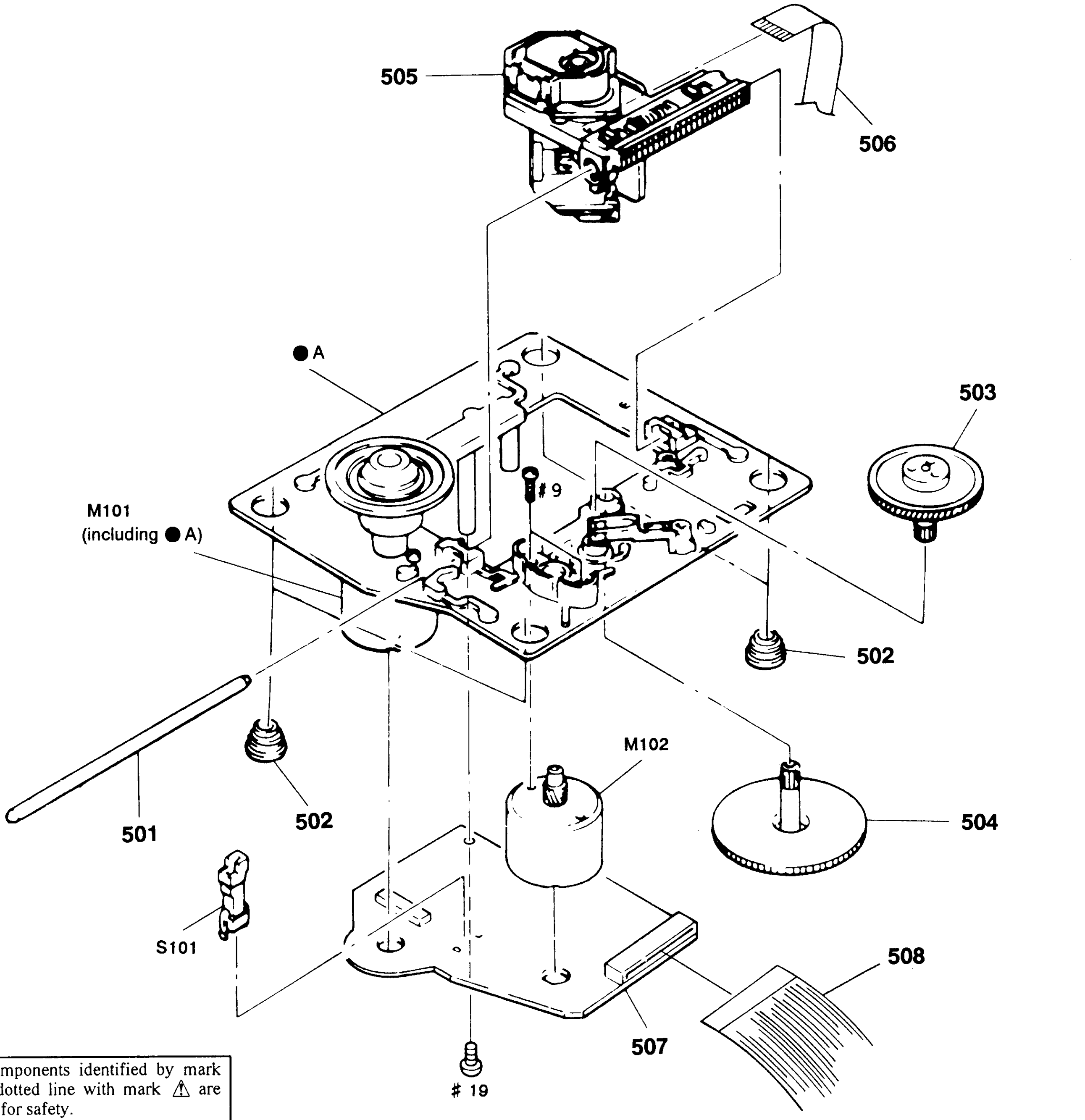
Ref. No.	Part No.	Description	Remark	Ref. No.	Part No.	Description	Remark
351	4-954-649-01	SHAFT (ST-L)		* 371	4-954-621-01	STOPPER (TB)	
352	4-954-644-01	BRACKET (STOCKER L)		* 372	1-645-607-11	CDM MOTOR BOARD (A-H)	
353	4-954-638-01	TABLE, DISK		* 373	4-954-631-01	SHAFT (SL GUIDE)	
354	4-954-651-01	EMBLEM (TABLE)		* 374	4-954-623-01	FULCRUM (BU)	
355	4-954-651-11	EMBLEM (TABLE)		375	4-955-575-01	SPRING (BU), COMPRESSION	
356	4-954-651-21	EMBLEM (TABLE)		* 376	X-4942-941-1	BRACKET (SL-A) ASSY	
357	4-954-651-31	EMBLEM (TABLE)		377	4-929-762-01	YOKE, CHUCKING	
358	4-954-651-41	EMBLEM (TABLE)		378	1-452-676-11	MAGNET	
359	4-954-639-01	GUIDE (TB)		379	4-954-650-01	HOLDER (MG)	
* 360	4-954-648-01	SHAFT (TABLE GUIDE)		380	4-955-230-01	PULLEY (CHUCKING)	
361	4-954-645-01	GUIDE (ST-RF)		* 381	X-4942-942-1	HOLDER (BU) ASSY	
362	4-954-646-01	GUIDE (ST-RR)		382	4-954-625-01	GEAR (CDM)	
* 363	X-4942-943-1	BRACKET (ST-B) ASSY		383	3-372-516-01	PULLEY (LOADING)	
364	4-954-628-01	FLANGE (PULLEY)		384	4-954-624-01	BELT (CDM)	
365	4-954-630-01	SLIDER (TB)		* 385	A-4660-264-A	BRACKET (SL-B) ASSY	
366	4-954-634-01	BELT (SL)		* 386	3-162-496-01	CORE, SHIELD	
367	4-954-629-01	PULLEY (SL)		387	4-955-231-01	SPACER (MG)	
368	4-933-134-01	SCREW (+PTPWH M2.6X6)		388	3-558-708-21	WASHER, STOPPER	
369	3-669-595-00	WASHER (2), STOPPER		389	4-955-890-01	SCREW (3X6)	
370	4-954-627-01	GEAR (SL)		M103	A-4660-232-A	MOTOR (CDM) ASSY (LOADING)	

8-9. CD MECHANISM SECTION 2 (CDM23B-5BD3)


451
468
458
453
■A
M105
452
M104
not supplied
452
454
454
461
459
(including ■A, D)
452
454
460
455
# 18
S102
# 18
# 6
469
453
456
457
# 18
462
■D
466
# 17
463
# 16
464
452
467
# 6
465
not supplied
F
F

Ref. No.	Part No.	Description	Remark
451	X-4942-939-1	SLIDER (ST-L) ASSY	
452	3-558-708-21	WASHER, STOPPER	
453	4-954-625-01	GEAR (CDM)	
454	3-372-517-01	GEAR (LOADING)	
455	4-954-624-01	BELT (CDM)	
456	3-372-516-01	PULLEY (LOADING)	
457	4-954-636-01	GEAR (E)	
458	3-681-678-00	WASHER, SLIT	
* 459	1-645-607-11	CDM MOTOR BOARD (A-H)	
* 460	4-954-633-01	GUIDE (TB-LR)	
* 461	4-954-621-01	STOPPER (TB)	
462	X-4942-940-1	SLIDER (ST-R) ASSY	
* 463	X-4942-937-1	CHASSIS (CDM) ASSY	
464	4-954-637-01	PULLEY (BU)	
465	4-954-635-01	BELT (BU)	
466	4-955-168-01	SPRING, TENSION	
* 467	4-954-632-02	LEVER (JOINT)	
468	A-4660-167-A	SLIDER (BU CAM) ASSY	
469	4-928-473-01	INSULATOR	
M104	A-4660-232-A	MOTOR (CDM) ASSY (UP/DOWN)	
M105	A-4660-232-A	MOTOR (CDM) ASSY (CLAMP)	
S102	1-466-819-11	ENCODER, ROTARY	

8-10. OPTICAL PICK-UP SECTION (BU-5BD3)



The components identified by mark ⚠ or dotted line with mark ⚠ are critical for safety.
Replace only with part number specified.

Les composants identifiés par une marque ⚠ sont critiques pour la sécurité.
Ne les remplacer que par une piéce portant le numéro spécifié.

Ref. No.	Part No.	Description	Remark
501	4-917-565-01	SHAFT, SLED	
502	4-933-126-01	INSULATOR (A)	
503	4-917-567-01	GEAR (M)	
504	4-917-564-01	GEAR (P), FLATNESS	
⚠505	8-848-144-11	DEVICE, OPTICAL KSS-240A	
506	1-575-001-11	WIRE, FLAT TYPE (12 CORE)	
* 507	A-4617-371-A	BD BOARD, COMPLETE	
508	1-751-597-11	WIRE (FLAT TYPE)(22 CORE)	
M101	X-4917-523-3	MOTOR ASSY, DISK (SPINDLE)	
M102	X-4917-504-1	MOTOR ASSY (SLED)	
S101	1-572-085-11	SWITCH LEAF (LIMIT)	

SECTION 9
ELECTRICAL PARTS LIST

BD

NOTE:

The components identified by mark ⚠ or dotted line with mark ⚠ are critical for safety.
Replace only with part number specified.

Les composants identifiés par une marque ⚠ sont critiques pour la sécurité.
Ne les remplacer que par une piéce portant le numéro spécifié.

When indicating parts by reference number, please include the board name.

- Due to standardization, replacements in the parts list may be different from the parts specified in the diagrams or the components used on the set.
- -XX, -X mean standardized parts, so they may have some difference from the original one.
- RESISTORS
  All resistors are in ohms
  METAL: Metal-film resistor
  METAL OXIDE: Metal Oxide-film resistor
  F : nonflammable
- CND : Canadian model
- G : German model
- IT : Italian model
- EE : East European model
- EA : Saudi Arabia model
- AUS : Australian model
- SP : Singapore model

- Items marked "*" are not stocked since they are seldom required for routine service. Some delay should be anticipated when ordering these items.
- Color Indication of Appearance Parts Example:
  KNOB, BALANCE (WHITE) . . . (RED)
  ↑ Parts color ↑ Cabinet's color
- SEMICONDUCTORS
  In each case, u: μ , for example:
  uA...: μA..., uPA...: μPA...,
  uPB...: μPB..., uPC...: μPC...,
  uPD...: μPD...
- CAPACITORS
  uF : μF
- COILS
  uH : μH
- Hardware (# mark) list is given in the last of this parts list.

Ref. No.	Part No.	Description	Remark
*	A-4617-371-A	BD BOARD, COMPLETE ******************	
		< CAPACITOR >	
C101	1-163-038-91	CERAMIC CHIP 0.1uF 25V	
C102	1-163-989-11	CERAMIC CHIP 0.033uF 10% 25V	
C103	1-126-163-11	ELECT 4.7uF 20% 50V	
C104	1-163-038-91	CERAMIC CHIP 0.1uF 25V	
C105	1-126-154-11	ELECT 47uF 20% 6.3V	
C106	1-126-154-11	ELECT 47uF 20% 6.3V	
C107	1-126-154-11	ELECT 47uF 20% 6.3V	
C108	1-163-038-91	CERAMIC CHIP 0.1uF 25V	
C109	1-163-038-91	CERAMIC CHIP 0.1uF 25V	
C110	1-163-989-11	CERAMIC CHIP 0.033uF 10% 25V	
C111	1-131-367-00	TANTALUM 22uF 10% 20V	
C112	1-164-232-11	CERAMIC CHIP 0.01uF 50V	
C113	1-164-232-11	CERAMIC CHIP 0.01uF 50V	
C114	1-164-161-11	CERAMIC CHIP 0.0022uF 10% 100V	
C115	1-164-161-11	CERAMIC CHIP 0.0022uF 10% 100V	
C117	1-163-038-91	CERAMIC CHIP 0.1uF 25V	
C118	1-163-038-91	CERAMIC CHIP 0.1uF 25V	
C119	1-164-161-11	CERAMIC CHIP 0.0022uF 10% 100V	
C120	1-163-989-11	CERAMIC CHIP 0.033uF 10% 25V	
C151	1-163-019-00	CERAMIC CHIP 0.0068uF 10% 50V	
C152	1-163-038-91	CERAMIC CHIP 0.1uF 25V	
C153	1-163-006-11	CERAMIC CHIP 560PF 10% 50V	
C154	1-164-161-11	CERAMIC CHIP 0.0022uF 10% 100V	
C155	1-163-023-00	CERAMIC CHIP 0.015uF 5% 50V	
C171	1-163-038-91	CERAMIC CHIP 0.1uF 25V	
C172	1-163-038-91	CERAMIC CHIP 0.1uF 25V	
C173	1-163-038-91	CERAMIC CHIP 0.1uF 25V	
C174	1-163-038-91	CERAMIC CHIP 0.1uF 25V	
		< CONNECTOR >	
CN101	1-568-796-11	SOCKET, CONNECTOR 22P	
CN102	1-568-795-11	SOCKET, CONNECTOR 12P	
		< IC >	
IC101	8-752-053-73	IC CXA1372AQ	
IC102	8-759-822-36	IC LA6532M	

Ref. No.	Part No.	Description	Remark
		< JUMPER RESISTOR >	
JR101	1-216-295-00	METAL CHIP 0 5% 1/10W	
JR102	1-216-295-00	METAL CHIP 0 5% 1/10W	
		< MOTOR >	
M101	X-4917-523-3	MOTOR, DISK ASSY (SPINDLE)	
M102	X-4917-504-1	MOTOR, ASSY (SLED)	
		< TRANSISTOR >	
Q101	8-729-901-01	TRANSISTOR DTC144EK	
		< RESISTOR >	
R101	1-216-097-00	METAL CHIP 100K 5% 1/10W	
R102	1-216-095-00	METAL CHIP 82K 5% 1/10W	
R103	1-216-091-00	METAL CHIP 56K 5% 1/10W	
R104	1-216-099-00	METAL CHIP 120K 5% 1/10W	
R105	1-216-069-00	METAL CHIP 6.8K 5% 1/10W	
R106	1-216-061-00	METAL CHIP 3.3K 5% 1/10W	
R107	1-216-114-00	METAL GLAZE 510K 5% 1/10W	
R108	1-216-105-91	METAL GLAZE 220K 5% 1/10W	
R109	1-216-061-00	METAL CHIP 3.3K 5% 1/10W	
R110	1-216-049-00	METAL CHIP 1K 5% 1/10W	
R111	1-216-049-00	METAL CHIP 1K 5% 1/10W	
R112	1-216-083-00	METAL CHIP 27K 5% 1/10W	
R113	1-216-071-00	METAL CHIP 8.2K 5% 1/10W	
R114	1-216-105-91	METAL GLAZE 220K 5% 1/10W	
R152	1-216-073-00	METAL CHIP 10K 5% 1/10W	
R153	1-216-085-00	METAL CHIP 33K 5% 1/10W	
R154	1-216-085-00	METAL CHIP 33K 5% 1/10W	
R155	1-216-093-00	METAL CHIP 68K 5% 1/10W	
R156	1-216-081-00	METAL CHIP 22K 5% 1/10W	
R157	1-216-079-00	METAL CHIP 18K 5% 1/10W	
R158	1-216-079-00	METAL CHIP 18K 5% 1/10W	
R159	1-216-079-00	METAL CHIP 18K 5% 1/10W	
R160	1-216-049-00	METAL CHIP 1K 5% 1/10W	
R171	1-216-001-00	METAL CHIP 10 5% 1/10W	
R172	1-216-001-00	METAL CHIP 10 5% 1/10W	
R173	1-216-001-00	METAL CHIP 10 5% 1/10W	
R174	1-216-001-00	METAL CHIP 10 5% 1/10W	

BD CD MAIN

	Ref. No.	Part No.	Description			Remark
			< VARIABLE RESISTOR >			
	RV101	1-238-600-11	RES, ADJ, CARBON 10K			
	RV102	1-238-600-11	RES, ADJ, CARBON 10K			
			< SWITCH >			
	S101	1-572-085-11	SWITCH, LEAF (LIMIT)			
			***			
*		A-4360-947-A	CD MAIN BOARD, COMPLETE			
			**********************			
			< CAPACITOR >			
	C400	1-124-360-00	ELECT	1000uF	20%	16V
	C405	1-124-443-00	ELECT	100uF	20%	10V
	C406	1-164-161-11	CERAMIC CHIP	0.0022uF	10%	100V
	C407	1-165-319-11	CERAMIC CHIP	0.1uF		50V
	C408	1-124-443-00	ELECT	100uF	20%	10V
	C409	1-165-319-11	CERAMIC CHIP	0.1uF		50V
	C410	1-165-319-11	CERAMIC CHIP	0.1uF		50V
	C411	1-126-176-11	ELECT	220uF	20%	10V
	C412	1-164-346-11	CERAMIC CHIP	1uF		16V
	C413	1-164-346-11	CERAMIC CHIP	1uF		16V
	C414	1-165-319-11	CERAMIC CHIP	0.1uF		50V
	C415	1-124-443-00	ELECT	100uF	20%	10V
	C419	1-164-346-11	CERAMIC CHIP	1uF		16V
	C420	1-163-035-00	CERAMIC CHIP	0.047uF		50V
	C421	1-163-145-00	CERAMIC CHIP	0.0015uF	5%	50V
	C422	1-164-346-11	CERAMIC CHIP	1uF		16V
	C423	1-164-005-11	CERAMIC CHIP	0.47uF		25V
	C424	1-164-232-11	CERAMIC CHIP	0.01uF		50V
	C425	1-164-346-11	CERAMIC CHIP	1uF		16V
	C426	1-164-346-11	CERAMIC CHIP	1uF		16V
	C427	1-164-346-11	CERAMIC CHIP	1uF		16V
	C428	1-165-319-11	CERAMIC CHIP	0.1uF		50V
	C429	1-163-229-11	CERAMIC CHIP	12PF	5%	50V
	C430	1-163-227-11	CERAMIC CHIP	10PF	0.5PF	50V
	C431	1-164-346-11	CERAMIC CHIP	1uF		16V
	C432	1-164-346-11	CERAMIC CHIP	1uF		16V
	C433	1-164-346-11	CERAMIC CHIP	1uF		16V
	C434	1-164-346-11	CERAMIC CHIP	1uF		16V
	C435	1-165-319-11	CERAMIC CHIP	0.1uF		50V
	C436	1-165-319-11	CERAMIC CHIP	0.1uF		50V
	C437	1-165-319-11	CERAMIC CHIP	0.1uF		50V
	C438	1-165-319-11	CERAMIC CHIP	0.1uF		50V
	C442	1-163-137-00	CERAMIC CHIP	680PF	5%	50V
	C443	1-163-137-00	CERAMIC CHIP	680PF	5%	50V
	C450	1-124-604-00	ELECT	330uF	20%	10V
	C452	1-124-604-00	ELECT	330uF	20%	10V
	C454	1-124-903-11	ELECT	1uF	20%	50V
	C455	1-124-902-00	ELECT	0.47uF	20%	50V
	C456	1-165-319-11	CERAMIC CHIP	0.1uF		50V
	C457	1-124-917-11	ELECT	33uF	20%	63V
	C458	1-165-319-11	CERAMIC CHIP	0.1uF		50V
	C460	1-124-604-00	ELECT	330uF	20%	10V
	C482	1-130-481-00	MYLAR	0.0068uF	5%	50V
	C483	1-130-481-00	MYLAR	0.0068uF	5%	50V
	C484	1-124-907-11	ELECT	10uF	20%	50V
	C485	1-124-907-11	ELECT	10uF	20%	50V
			< CONNECTOR >			
	CN402	1-695-383-31	PIN, CONNECTOR (PC BOARD) 22P			
	CN403	1-691-644-11	SOCKET, CONNECTOR 7P			
	CN404	1-695-376-21	PIN, CONNECTOR (PC BOARD) 15P			
	CN406	1-506-481-11	PIN, CONNECTOR 2P			
*	CN407	1-568-945-11	PIN, CONNECTOR 7P			
*	CN408	1-573-275-11	PIN, CONNECTOR 5P			
*	CN409	1-568-941-11	PIN, CONNECTOR 3P			
*	CN410	1-568-941-11	PIN, CONNECTOR 3P			
*	CN411	1-568-942-11	PIN, CONNECTOR 4P			
			< DIODE >			
	D406	8-719-990-39	DIODE DCB010			
	D407	8-719-210-33	DIODE EC10DS2			
	D408	8-719-210-33	DIODE EC10DS2			
	D410	8-719-990-39	DIODE DCB010			
			< IC >			
	IC402	8-759-604-86	IC M5F7807L			
	IC403	8-759-821-93	IC LA5601			
	IC404	8-759-821-93	IC LA5601			
	IC408	8-759-009-21	IC MC14093BF			
	IC409	8-752-352-93	IC CXD2500BQ			
	IC410	8-759-098-27	IC MSM6538-01GS-VKR1			
	IC411	8-759-155-52	IC PCM-67U-B			
	IC412	8-759-636-55	IC M5218AFP			
	IC414	8-759-501-73	IC BA6418N			
	IC415	8-759-501-73	IC BA6418N			
	IC416	8-759-501-73	IC BA6418N			
	IC450	8-759-163-37	IC uPD75516GF-461-3B9			
			< JUMPER RESISTOR >			
	JR401	1-216-295-00	METAL CHIP	0	5%	1/10W
	JR403	1-216-295-00	METAL CHIP	0	5%	1/10W
	JR410	1-216-295-00	METAL CHIP	0	5%	1/10W
	JR488	1-216-295-00	METAL CHIP	0	5%	1/10W
	JR490	1-216-295-00	METAL CHIP	0	5%	1/10W
			< COIL >			
	L401	1-408-777-00	INDUCTOR CHIP	10uH		

Ref. No.	Part No.	Description				Remark
L402	1-408-777-00	INDUCTOR CHIP	10uH			
L403	1-408-777-00	INDUCTOR CHIP	10uH			
L405	1-408-777-00	INDUCTOR CHIP	10uH			

< TRANSISTOR >

Q401	8-729-118-01	TRANSISTOR	2SB1116-K			
Q402	8-729-900-80	TRANSISTOR	DTC114ES			

< RESISTOR >

R401	1-216-001-00	METAL CHIP	10	5%	1/10W	
R402	1-216-073-00	METAL CHIP	10K	5%	1/10W	
R404	1-216-043-00	METAL CHIP	560	5%	1/10W	
R405	1-216-073-00	METAL CHIP	10K	5%	1/10W	
R406	1-216-073-00	METAL CHIP	10K	5%	1/10W	
R407	1-216-073-00	METAL CHIP	10K	5%	1/10W	
R408	1-216-073-00	METAL CHIP	10K	5%	1/10W	
R409	1-216-349-00	CARBON	1	5%	1/2W	
R417	1-216-073-00	METAL CHIP	10K	5%	1/10W	
R418	1-216-073-00	METAL CHIP	10K	5%	1/10W	
R419	1-216-073-00	METAL CHIP	10K	5%	1/10W	
R420	1-216-073-00	METAL CHIP	10K	5%	1/10W	
R421	1-216-049-00	METAL CHIP	1K	5%	1/10W	
R422	1-216-073-00	METAL CHIP	10K	5%	1/10W	
R423	1-216-073-00	METAL CHIP	10K	5%	1/10W	
R424	1-216-073-00	METAL CHIP	10K	5%	1/10W	
R425	1-216-073-00	METAL CHIP	10K	5%	1/10W	
R426	1-216-073-00	METAL CHIP	10K	5%	1/10W	
R427	1-216-073-00	METAL CHIP	10K	5%	1/10W	
R428	1-216-073-00	METAL CHIP	10K	5%	1/10W	
R429	1-216-073-00	METAL CHIP	10K	5%	1/10W	
R430	1-216-073-00	METAL CHIP	10K	5%	1/10W	
R431	1-216-073-00	METAL CHIP	10K	5%	1/10W	
R432	1-216-073-00	METAL CHIP	10K	5%	1/10W	
R433	1-216-073-00	METAL CHIP	10K	5%	1/10W	
R434	1-216-061-00	METAL CHIP	3.3K	5%	1/10W	
R435	1-216-061-00	METAL CHIP	3.3K	5%	1/10W	
R436	1-216-073-00	METAL CHIP	10K	5%	1/10W	
R437	1-216-073-00	METAL CHIP	10K	5%	1/10W	
R439	1-216-061-00	METAL CHIP	3.3K	5%	1/10W	
R440	1-216-061-00	METAL CHIP	3.3K	5%	1/10W	
R441	1-216-073-00	METAL CHIP	10K	5%	1/10W	
R442	1-216-073-00	METAL CHIP	10K	5%	1/10W	
R443	1-216-097-00	METAL CHIP	100K	5%	1/10W	
R444	1-216-041-00	METAL CHIP	470	5%	1/10W	
R445	1-216-041-00	METAL CHIP	470	5%	1/10W	
R446	1-216-041-00	METAL CHIP	470	5%	1/10W	
R447	1-216-041-00	METAL CHIP	470	5%	1/10W	
R449	1-216-041-00	METAL CHIP	470	5%	1/10W	
R450	1-216-041-00	METAL CHIP	470	5%	1/10W	
R451	1-216-041-00	METAL CHIP	470	5%	1/10W	
R452	1-216-041-00	METAL CHIP	470	5%	1/10W	
R453	1-216-060-00	METAL GLAZE	3K	5%	1/10W	
R454	1-216-060-00	METAL GLAZE	3K	5%	1/10W	
R460	1-216-068-00	METAL CHIP	6.2K	5%	1/10W	
R461	1-216-068-00	METAL CHIP	6.2K	5%	1/10W	
R462	1-216-009-00	METAL CHIP	22	5%	1/10W	
R463	1-216-051-00	METAL CHIP	1.2K	5%	1/10W	
R464	1-216-051-00	METAL CHIP	1.2K	5%	1/10W	
R468	1-216-049-00	METAL CHIP	1K	5%	1/10W	
R469	1-216-025-00	METAL CHIP	100	5%	1/10W	
R470	1-216-025-00	METAL CHIP	100	5%	1/10W	
R471	1-216-025-00	METAL CHIP	100	5%	1/10W	
R472	1-216-025-00	METAL CHIP	100	5%	1/10W	
R473	1-216-061-00	METAL CHIP	3.3K	5%	1/10W	
R474	1-216-061-00	METAL CHIP	3.3K	5%	1/10W	
R475	1-216-061-00	METAL CHIP	3.3K	5%	1/10W	
R476	1-216-061-00	METAL CHIP	3.3K	5%	1/10W	
R478	1-216-025-00	METAL CHIP	100	5%	1/10W	
R483	1-216-035-00	METAL CHIP	270	5%	1/10W	
R484	1-216-035-00	METAL CHIP	270	5%	1/10W	
R485	1-216-105-91	METAL GLAZE	220K	5%	1/10W	
R486	1-216-105-91	METAL GLAZE	220K	5%	1/10W	
R492	1-216-089-91	METAL GLAZE	47K	5%	1/10W	
R493	1-216-089-91	METAL GLAZE	47K	5%	1/10W	
R494	1-216-089-91	METAL GLAZE	47K	5%	1/10W	
R495	1-216-089-91	METAL GLAZE	47K	5%	1/10W	
R496	1-216-089-91	METAL GLAZE	47K	5%	1/10W	
R497	1-216-089-91	METAL GLAZE	47K	5%	1/10W	
R498	1-216-089-91	METAL GLAZE	47K	5%	1/10W	
R499	1-216-089-91	METAL GLAZE	47K	5%	1/10W	

< SWITCH >

S102	1-466-819-11	ENCODER, ROTARY				

< VIBRATOR >

X401	1-577-359-21	VIBRATOR, CERAMIC (4.19MHz)				
X402	1-567-908-11	VIBRATOR, CRYSTAL (16MHz)				

****

* 1-645-607-11 CDM MOTOR BOARD (A-H)

****

< CAPACITOR >

C101	1-164-159-11	CERAMIC	0.1uF			50V
C102	1-164-159-11	CERAMIC	0.1uF			50V
C103	1-164-159-11	CERAMIC	0.1uF			50V

< CONNECTOR >

* CN106	1-568-954-11	PIN, CONNECTOR 5P				

CDM MOTOR DISPLAY

< IC >

Ref. No.	Part No.	Description	Remark
IC401	8-759-071-52	IC ON1023-S	
IC601	8-759-071-52	IC ON1023-S	

< MOTOR >

Ref. No.	Part No.	Description	Remark
M103	A-4660-232-A	MOTOR (CDM) ASSY (LOADING)	
M104	A-4660-232-A	MOTOR (CDM) ASSY (UP/DOWN)	
M105	A-4660-232-A	MOTOR (CDM) ASSY (CLAMP)	

< RESISTOR >

Ref. No.	Part No.	Description	Remark
R401	1-249-407-11	CARBON 150 5% 1/4W	F
R402	1-249-429-11	CARBON 10K 5% 1/4W	
R601	1-249-407-11	CARBON 150 5% 1/4W	F
R602	1-249-429-11	CARBON 10K 5% 1/4W	

< SWITCH >

Ref. No.	Part No.	Description	Remark
S101	1-571-300-21	SWITCH, ROTARY (BU UP/DOWN)	
S103	1-692-080-11	SWITCH, PUSH (1 KEY)(TRAY OUT)	
S104	1-692-080-11	SWITCH, PUSH (1 KEY)(TRAN IN)	

****

Ref. No.	Part No.	Description	Remark
*	A-4360-946-A	DISPLAY BOARD, COMPLETE (C50:CND/C50U) ***********************	
*	A-4360-962-A	DISPLAY BOARD, COMPLETE (C50:G) ***********************	
*	A-4360-971-A	DISPLAY BOARD, COMPLETE (C50:AEP, UK) ***********************	
*	A-4360-978-A	DISPLAY BOARD, COMPLETE *********************** (C50:E, EA, AUS, SP, PX)	
*	A-4365-147-A	DISPLAY BOARD, COMPLETE (C50:IT) ***********************	
*	A-4365-149-A	DISPLAY BOARD, COMPLETE (C50:EE) ***********************	
*	4-955-901-01	CUSHION (FL)	
*	4-959-227-01	HOLDER, LED	
	4-959-581-01	COVER (SENSOR)	

< CAPACITOR >

Ref. No.	Part No.	Description	Remark
C501	1-126-160-11	ELECT 1uF 20%	50V
C502	1-126-160-11	ELECT 1uF 20%	50V
C503	1-164-097-11	CERAMIC 0.022uF	50V
C505	1-126-301-11	ELECT 1uF 20%	50V
C506	1-163-033-00	CERAMIC CHIP 0.022uF	50V
C507	1-163-033-00	CERAMIC CHIP 0.022uF	50V
C508	1-136-165-00	FILM 0.1uF 5%	50V
C509	1-163-033-00	CERAMIC CHIP 0.022uF	50V
C510	1-136-173-00	FILM 0.47uF 5%	50V
C511	1-163-033-00	CERAMIC CHIP 0.022uF	50V
C512	1-164-097-11	CERAMIC 0.022uF	50V
C513	1-124-261-00	ELECT 10uF 20%	50V
C514	1-163-235-11	CERAMIC CHIP 22PF 5%	50V
C515	1-163-099-00	CERAMIC CHIP 18PF 5%	50V
C516	1-124-261-00	ELECT 10uF 20%	50V
C517	1-125-486-11	DOUBLE LAYERS 0.22F	5.5V
C518	1-124-261-00	ELECT 10uF 20%	50V
C598	1-163-141-00	CERAMIC CHIP 0.001uF 5%	50V
C601	1-164-346-11	CERAMIC CHIP 1uF	16V
C602	1-164-346-11	CERAMIC CHIP 1uF	16V
C603	1-164-161-11	CERAMIC CHIP 0.0022uF 10%	100V
C604	1-165-319-11	CERAMIC CHIP 0.1uF	50V
C881	1-124-257-00	ELECT 2.2uF 20%	50V
C882	1-124-257-00	ELECT 2.2uF 20%	50V
C883	1-124-257-00	ELECT 2.2uF 20%	50V
C884	1-165-319-11	CERAMIC CHIP 0.1uF	50V
C885	1-124-465-00	ELECT 0.47uF 20%	50V
C886	1-124-257-00	ELECT 2.2uF 20%	50V
C887	1-163-033-00	CERAMIC CHIP 0.022uF	50V
C888	1-165-319-11	CERAMIC CHIP 0.1uF	50V
C889	1-124-257-00	ELECT 2.2uF 20%	50V
C890	1-163-017-00	CERAMIC CHIP 0.0047uF 5%	50V
C891	1-163-033-00	CERAMIC CHIP 0.022uF	50V
C892	1-124-257-00	ELECT 2.2uF 20%	50V
C893	1-163-011-11	CERAMIC CHIP 0.0015uF 10%	50V
C894	1-165-319-11	CERAMIC CHIP 0.1uF	50V

< CONNECTOR >

Ref. No.	Part No.	Description	Remark
CN601	1-691-648-11	SOCKET, CONNECTOR 15P	
CN602	1-695-372-31	PIN, CONNECTOR (PC BOARD) 11P	
CN603	1-695-380-31	PIN, CONNECTOR (PC BOARD) 19P	

< DIODE >

Ref. No.	Part No.	Description	Remark
D425	8-719-301-37	LED SEL2210S-CD (TUNING)	
D426	8-719-301-37	LED SEL2210S-CD (PRESET)	
D502	8-719-990-39	DIODE DCB010	
D503	8-719-210-33	DIODE EC10DS2	
D504	8-719-990-39	DIODE DCB010	
D505	8-719-990-39	DIODE DCB010	
D506	8-719-990-39	DIODE DCB010	
D507	8-719-400-62	DIODE MA3068-L	
D508	8-719-990-39	DIODE DCB010	
D601	8-719-990-39	DIODE DCB010	
D603	8-719-301-43	LED SEL2410E-C (DISC 1)	
D604	8-719-301-43	LED SEL2410E-C (DISC 2)	
D605	8-719-301-43	LED SEL2410E-C (DISC 3)	
D606	8-719-301-43	LED SEL2410E-C (DISC 4)	
D607	8-719-301-43	LED SEL2410E-C (DISC 5)	

Ref. No.	Part No.	Description	Remark
D608	8-719-301-38	LED SEL2210S-C (DISC 1)	
D609	8-719-301-38	LED SEL2210S-C (DISC 2)	
D610	8-719-301-38	LED SEL2210S-C (DISC 3)	
D611	8-719-301-38	LED SEL2210S-C (DISC 4)	
D612	8-719-301-38	LED SEL2210S-C (DISC 5)	
D627	8-719-029-95	LED TLN117	
D881	8-719-990-39	DIODE DCB010	
D882	8-719-990-39	DIODE DCB010	
D883	8-719-990-39	DIODE DCB010	
D884	8-719-990-39	DIODE DCB010	
D885	8-719-990-39	DIODE DCB010	
		< FLUORESCENT INDICATOR >	
FL501	1-517-182-11	INDICATOR TUBE, FLUORESCENT	
		< IC >	
IC501	8-759-175-89	IC uPD78042-GF-033-3B9	
IC502	8-759-634-43	IC M51953BFP	
IC601	8-759-175-91	IC uPD75517-GF-209-3B9	
		< JUMPER RESISTOR >	
JR601	1-216-296-00	METAL CHIP 0 5% 1/8W	
JR800	1-216-296-00	METAL CHIP 0 5% 1/8W	
		< COIL >	
L501	1-408-789-21	INDUCTOR CHIP 100uH	
L601	1-408-777-00	INDUCTOR CHIP 10uH	
		< TRANSISTOR >	
Q501	8-729-602-21	TRANSISTOR 2SC4154-F	
Q502	8-729-602-21	TRANSISTOR 2SC4154-F	
Q601	8-729-602-21	TRANSISTOR 2SC4154-F	
Q602	8-729-602-36	TRANSISTOR 2SA1602-F	
Q603	8-729-602-36	TRANSISTOR 2SA1602-F	
Q604	8-729-018-23	TRANSISTOR TPS626	
Q605	8-729-602-21	TRANSISTOR 2SC4154-F	
Q606	8-729-602-21	TRANSISTOR 2SC4154-F	
Q607	8-729-602-21	TRANSISTOR 2SC4154-F	
Q608	8-729-602-21	TRANSISTOR 2SC4154-F	
Q609	8-729-602-21	TRANSISTOR 2SC4154-F	
		< RESISTOR >	
R503	1-216-025-00	METAL CHIP 100 5% 1/10W	
R505	1-216-073-00	METAL CHIP 10K 5% 1/10W	
R506	1-216-081-00	METAL CHIP 22K 5% 1/10W	
R507	1-216-081-00	METAL CHIP 22K 5% 1/10W	
R527	1-216-089-91	METAL GLAZE 47K 5% 1/10W	
R528	1-216-089-91	METAL GLAZE 47K 5% 1/10W	
R529	1-216-089-91	METAL GLAZE 47K 5% 1/10W	

Ref. No.	Part No.	Description	Remark
R530	1-216-089-91	METAL GLAZE 47K 5% 1/10W	
R531	1-216-089-91	METAL GLAZE 47K 5% 1/10W	
R532	1-216-089-91	METAL GLAZE 47K 5% 1/10W	
R533	1-216-089-91	METAL GLAZE 47K 5% 1/10W	
R534	1-216-089-91	METAL GLAZE 47K 5% 1/10W	
R535	1-216-089-91	METAL GLAZE 47K 5% 1/10W	
R536	1-216-089-91	METAL GLAZE 47K 5% 1/10W	
R537	1-216-089-91	METAL GLAZE 47K 5% 1/10W	
R538	1-216-089-91	METAL GLAZE 47K 5% 1/10W	
R539	1-216-089-91	METAL GLAZE 47K 5% 1/10W	
R540	1-216-089-91	METAL GLAZE 47K 5% 1/10W	
R541	1-216-089-91	METAL GLAZE 47K 5% 1/10W	
R542	1-216-089-91	METAL GLAZE 47K 5% 1/10W	
R543	1-216-089-91	METAL GLAZE 47K 5% 1/10W	
R544	1-216-089-91	METAL GLAZE 47K 5% 1/10W	
R548	1-216-073-00	METAL CHIP 10K 5% 1/10W	
R549	1-216-073-00	METAL CHIP 10K 5% 1/10W	
R550	1-216-089-91	METAL GLAZE 47K 5% 1/10W	
R551	1-216-073-00	METAL CHIP 10K 5% 1/10W	
R552	1-216-073-00	METAL CHIP 10K 5% 1/10W	
R553	1-216-073-00	METAL CHIP 10K 5% 1/10W	
R554	1-216-073-00	METAL CHIP 10K 5% 1/10W	
R560	1-216-121-00	METAL CHIP 1M 5% 1/10W	
R562	1-216-061-00	METAL CHIP 3.3K 5% 1/10W	
R563	1-216-041-00	METAL CHIP 470 5% 1/10W	(C50:E, EA, AUS, SP, PX)
R563	1-216-050-00	METAL CHIP 1.1K 5% 1/10W	(C50:AEP, UK)
R563	1-216-057-91	METAL GLAZE 2.2K 5% 1/10W	(C50:CND/C50U)
R563	1-216-062-00	METAL CHIP 3.6K 5% 1/10W	(C50:IT)
R563	1-216-067-91	METAL CHIP 5.6K 5% 1/10W	(C50:EE)
R563	1-216-072-00	METAL CHIP 9.1K 5% 1/10W	(C50:G)
R564	1-216-049-00	METAL CHIP 1K 5% 1/10W	
R565	1-216-057-91	METAL GLAZE 2.2K 5% 1/10W	
R566	1-216-073-00	METAL CHIP 10K 5% 1/10W	
R567	1-216-115-00	METAL CHIP 560K 5% 1/10W	
R578	1-216-037-00	METAL CHIP 330 5% 1/10W	
R579	1-216-053-00	METAL CHIP 1.5K 5% 1/10W	
R580	1-216-025-00	METAL CHIP 100 5% 1/10W	
R581	1-216-027-00	METAL CHIP 120 5% 1/10W	
R582	1-216-027-00	METAL CHIP 120 5% 1/10W	
R583	1-216-029-00	METAL CHIP 150 5% 1/10W	
R584	1-216-031-00	METAL CHIP 180 5% 1/10W	
R585	1-216-033-00	METAL CHIP 220 5% 1/10W	
R586	1-216-035-00	METAL CHIP 270 5% 1/10W	
R587	1-216-037-00	METAL CHIP 330 5% 1/10W	
R598	1-216-049-00	METAL CHIP 1K 5% 1/10W	

DISPLAY

Ref. No.	Part No.	Description				Remark
R599	1-216-049-00	METAL CHIP	1K	5%	1/10W	
R600	1-216-065-00	METAL CHIP	4.7K	5%	1/10W	
R601	1-216-061-00	METAL CHIP	3.3K	5%	1/10W	
R603	1-216-061-00	METAL CHIP	3.3K	5%	1/10W	
R604	1-216-061-00	METAL CHIP	3.3K	5%	1/10W	
R606	1-216-073-00	METAL CHIP	10K	5%	1/10W	
R607	1-216-073-00	METAL CHIP	10K	5%	1/10W	
R608	1-216-073-00	METAL CHIP	10K	5%	1/10W	
R609	1-216-073-00	METAL CHIP	10K	5%	1/10W	
R610	1-216-073-00	METAL CHIP	10K	5%	1/10W	
R611	1-216-073-00	METAL CHIP	10K	5%	1/10W	
R612	1-216-089-91	METAL GLAZE	47K	5%	1/10W	
R614	1-216-073-00	METAL CHIP	10K	5%	1/10W	
R615	1-216-051-00	METAL CHIP	1.2K	5%	1/10W	
R616	1-216-049-00	METAL CHIP	1K	5%	1/10W	
R617	1-216-061-00	METAL CHIP	3.3K	5%	1/10W	
R618	1-216-061-00	METAL CHIP	3.3K	5%	1/10W	
R619	1-216-061-00	METAL CHIP	3.3K	5%	1/10W	
R620	1-216-027-00	METAL CHIP	120	5%	1/10W	
R621	1-216-027-00	METAL CHIP	120	5%	1/10W	
R622	1-216-027-00	METAL CHIP	120	5%	1/10W	
R623	1-216-027-00	METAL CHIP	120	5%	1/10W	
R624	1-216-027-00	METAL CHIP	120	5%	1/10W	
R625	1-216-024-00	METAL GLAZE	91	5%	1/10W	
R626	1-216-024-00	METAL GLAZE	91	5%	1/10W	
R627	1-216-024-00	METAL GLAZE	91	5%	1/10W	
R628	1-216-024-00	METAL GLAZE	91	5%	1/10W	
R629	1-216-024-00	METAL GLAZE	91	5%	1/10W	
R630	1-216-073-00	METAL CHIP	10K	5%	1/10W	
R631	1-216-073-00	METAL CHIP	10K	5%	1/10W	
R632	1-216-073-00	METAL CHIP	10K	5%	1/10W	
R633	1-216-073-00	METAL CHIP	10K	5%	1/10W	
R634	1-216-073-00	METAL CHIP	10K	5%	1/10W	
R635	1-216-073-00	METAL CHIP	10K	5%	1/10W	
R636	1-216-073-00	METAL CHIP	10K	5%	1/10W	
R637	1-216-073-00	METAL CHIP	10K	5%	1/10W	
R638	1-216-057-91	METAL GLAZE	2.2K	5%	1/10W	
R651	1-216-041-00	METAL CHIP	470	5%	1/10W	
R652	1-216-045-00	METAL CHIP	680	5%	1/10W	
R653	1-216-049-00	METAL CHIP	1K	5%	1/10W	
R654	1-216-053-00	METAL CHIP	1.5K	5%	1/10W	
R655	1-216-057-91	METAL GLAZE	2.2K	5%	1/10W	
R656	1-216-065-00	METAL CHIP	4.7K	5%	1/10W	
R657	1-216-075-00	METAL CHIP	12K	5%	1/10W	
R658	1-216-041-00	METAL CHIP	470	5%	1/10W	
R659	1-216-045-00	METAL CHIP	680	5%	1/10W	
R660	1-216-049-00	METAL CHIP	1K	5%	1/10W	
R661	1-216-053-00	METAL CHIP	1.5K	5%	1/10W	
R662	1-216-057-91	METAL GLAZE	2.2K	5%	1/10W	
R663	1-216-065-00	METAL CHIP	4.7K	5%	1/10W	

Ref. No.	Part No.	Description				Remark
R664	1-216-041-00	METAL CHIP	470	5%	1/10W	
R665	1-216-045-00	METAL CHIP	680	5%	1/10W	
R666	1-216-049-00	METAL CHIP	1K	5%	1/10W	
R667	1-216-053-00	METAL CHIP	1.5K	5%	1/10W	
R668	1-216-057-91	METAL GLAZE	2.2K	5%	1/10W	
R669	1-216-065-00	METAL CHIP	4.7K	5%	1/10W	
R670	1-216-075-00	METAL CHIP	12K	5%	1/10W	
R684	1-216-073-00	METAL CHIP	10K	5%	1/10W	
R690	1-216-073-00	METAL CHIP	10K	5%	1/10W	
R691	1-216-073-00	METAL CHIP	10K	5%	1/10W	
R692	1-216-073-00	METAL CHIP	10K	5%	1/10W	
R693	1-216-073-00	METAL CHIP	10K	5%	1/10W	
R699	1-216-073-00	METAL CHIP	10K	5%	1/10W	
R881	1-216-097-00	METAL CHIP	100K	5%	1/10W	
R882	1-216-044-00	METAL CHIP	620	5%	1/10W	
R883	1-216-097-00	METAL CHIP	100K	5%	1/10W	
R884	1-216-063-00	METAL CHIP	3.9K	5%	1/10W	
R885	1-216-047-00	METAL CHIP	820	5%	1/10W	
R886	1-216-097-00	METAL CHIP	100K	5%	1/10W	
R887	1-216-073-00	METAL CHIP	10K	5%	1/10W	
R888	1-216-049-00	METAL CHIP	1K	5%	1/10W	
R889	1-216-097-00	METAL CHIP	100K	5%	1/10W	
R890	1-216-073-00	METAL CHIP	10K	5%	1/10W	
R891	1-216-049-00	METAL CHIP	1K	5%	1/10W	
R892	1-216-097-00	METAL CHIP	100K	5%	1/10W	
R893	1-216-072-00	METAL CHIP	9.1K	5%	1/10W	
R894	1-216-095-00	METAL CHIP	82K	5%	1/10W	
		< SWITCH >				
S508	1-554-303-21	SWITCH, TACTILE (CLOCK SET/TIMER REC)				
S509	1-554-303-21	SWITCH, TACTILE (KARAOKE)				(C50:E, EA, AUS, SP, PX)
S510	1-554-303-21	SWITCH, TACTILE (CLOCK DISPLAY)				
S511	1-554-303-21	SWITCH, TACTILE (CLOCK SET/TIMER)				
S512	1-554-303-21	SWITCH, TACTILE (MEMORY/NEXT)				
S513	1-554-303-21	SWITCH, TACTILE (ST/MONO)				
S514	1-554-303-21	SWITCH, TACTILE (MODE)				
S515	1-554-303-21	SWITCH, TACTILE (BAND)				
S516	1-554-303-21	SWITCH, TACTILE (PRESET/TIMER -)				
S517	1-554-303-21	SWITCH, TACTILE (PRESET/TIMER +)				
S601	1-554-303-21	SWITCH, TACTILE (▷)				
S602	1-554-303-21	SWITCH, TACTILE (❚❚)				
S603	1-554-303-21	SWITCH, TACTILE (■)				
S604	1-554-303-21	SWITCH, TACTILE (OPEN/CLOSE ⏏ (1))				
S605	1-554-303-21	SWITCH, TACTILE (⏏ (2))				
S606	1-554-303-21	SWITCH, TACTILE (⏏ (3))				
S607	1-554-303-21	SWITCH, TACTILE (⏏ (4))				
S608	1-554-303-21	SWITCH, TACTILE (DISK CHECK ⏏ (5))				
S609	1-554-303-21	SWITCH, TACTILE (▶▶, ▷▷❘)				
S610	1-554-303-21	SWITCH, TACTILE (EDIT)				

Ref.No.	Part No.	Description	Remark
S611	1-554-303-21	SWITCH, TACTILE (DISC 1)	
S612	1-554-303-21	SWITCH, TACTILE (DISC 2)	
S613	1-554-303-21	SWITCH, TACTILE (DISC 3)	
S614	1-554-303-21	SWITCH, TACTILE (DISC 4)	
S615	1-554-303-21	SWITCH, TACTILE (DISC 5)	
S616	1-554-303-21	SWITCH, TACTILE (◀◀, |◁◁)	
S617	1-554-303-21	SWITCH, TACTILE (MUSIC/SCAN)	
S618	1-554-303-21	SWITCH, TACTILE (REPEAT)	
S619	1-554-303-21	SWITCH, TACTILE (PROGRAM)	
S620	1-554-303-21	SWITCH, TACTILE (SUFFLE)	
S621	1-554-303-21	SWITCH, TACTILE (CONTINUE)	
S622	1-554-303-21	SWITCH, TACTILE (CLEAR)	
S623	1-554-303-21	SWITCH, TACTILE (CHECK)	

< VIBRATOR >

Ref.No.	Part No.	Description	Remark
X501	1-567-098-00	OSCILLATOR, CRYSTAL (32.768kHz)	
X502	1-577-359-21	VIBRATOR, CERAMIC (32.768kHz)	
X601	1-577-359-21	VIBRATOR, CERAMIC (4.19MHz)	

****

Ref.No.	Part No.	Description	Remark
*	A-4360-951-A	FUNC BOARD, COMPLETE (C50U)	
		**************************	
*	A-4360-974-A	FUNC BOARD, COMPLETE (C50)	
		**************************	

< CAPACITOR >

Ref.No.	Part No.	Description	Remark
C516	1-126-096-11	ELECT 10uF 20% 35V	
C521	1-161-494-00	CERAMIC 0.022uF 25V	

< CONNECTOR >

Ref.No.	Part No.	Description	Remark
CN604	1-691-646-11	SOCKET, CONNECTOR 11P	

< DIODE >

Ref.No.	Part No.	Description	Remark
D421	8-719-301-37	LED SEL2210S-CD (MD/PHONO)	
D422	8-719-301-37	LED SEL2210S-CD (TUNER)(C50)	
D422	8-719-301-37	LED SEL2210S-CD (TAPE)(C50U)	
D423	8-719-301-37	LED SEL2210S-CD (CD)	
D424	8-719-301-37	LED SEL2210S-CD (TAPE)(C50)	
D424	8-719-301-37	LED SEL2210S-CD (TUNER)(C50U)	

< IC >

Ref.No.	Part No.	Description	Remark
IC401	8-759-056-83	IC M66312P	
IC503	8-749-923-80	IC GP1U90XB	

< RESISTOR >

Ref.No.	Part No.	Description	Remark
R555	1-249-405-11	CARBON 100 5% 1/4W	F
R556	1-249-405-11	CARBON 100 5% 1/4W	F
R569	1-249-437-11	CARBON 47K 5% 1/4W	
R570	1-249-419-11	CARBON 1.5K 5% 1/4W	F
R571	1-249-405-11	CARBON 100 5% 1/4W	F
R572	1-249-406-11	CARBON 120 5% 1/4W	F
R573	1-249-406-11	CARBON 120 5% 1/4W	F
R574	1-249-407-11	CARBON 150 5% 1/4W	F
R575	1-249-408-11	CARBON 180 5% 1/4W	F
R576	1-249-409-11	CARBON 220 5% 1/4W	F
R577	1-249-409-11	CARBON 220 5% 1/4W	F
R588	1-249-429-11	CARBON 10K 5% 1/4W	
R589	1-249-417-11	CARBON 1K 5% 1/4W	F
R590	1-249-417-11	CARBON 1K 5% 1/4W	F
R591	1-249-429-11	CARBON 10K 5% 1/4W	
R592	1-249-413-11	CARBON 470 5% 1/4W	F
R593	1-249-413-11	CARBON 470 5% 1/4W	F
R594	1-249-413-11	CARBON 470 5% 1/4W	F
R595	1-249-413-11	CARBON 470 5% 1/4W	F
R596	1-249-413-11	CARBON 470 5% 1/4W	F
R597	1-249-413-11	CARBON 470 5% 1/4W	F

< SWITCH >

Ref.No.	Part No.	Description	Remark
S500	1-554-303-21	SWITCH, TACTILE (POWER)	
S501	1-554-303-21	SWITCH, TACTILE (MD/PHONO)	
S502	1-554-303-21	SWITCH, TACTILE (TUNER)(C50)	
S502	1-554-303-21	SWITCH, TACTILE (TAPE)(C50U)	
S503	1-554-303-21	SWITCH, TACTILE (CD)	
S504	1-554-303-21	SWITCH, TACTILE (TAPE)(C50)	
S504	1-554-303-21	SWITCH, TACTILE (TUNER)(C50U)	
S505	1-554-303-21	SWITCH, TACTILE (SURROUND)	
S506	1-554-303-21	SWITCH, TACTILE (DBFB)	
S507	1-554-303-21	SWITCH, TACTILE (PRESET)	

****

Ref.No.	Part No.	Description	Remark
*	1-648-416-11	HP BOARD	
		********	

< BREAKER >

Ref.No.	Part No.	Description	Remark
CB951	1-532-564-00	BREAKER, CIRCUIT	
CB971	1-532-564-00	BREAKER, CIRCUIT	

< CONNECTOR >

Ref.No.	Part No.	Description	Remark
* CN951	1-564-519-11	PLUG, CONNECTOR 4P	
* CN952	1-564-519-11	PLUG, CONNECTOR 4P	

< JACK >

Ref.No.	Part No.	Description	Remark
J951	1-750-032-11	JACK (DIA. 3.5)(HEADPHONES)	

< RESISTOR >

Ref.No.	Part No.	Description	Remark
R963	1-249-415-11	CARBON 680 5% 1/4W	F
R964	1-249-415-11	CARBON 680 5% 1/4W	F
R983	1-249-415-11	CARBON 680 5% 1/4W	F

Ref. No.	Part No.	Description	Remark
R984	1-249-415-11	CARBON 680 5% 1/4W	F
**********	**********	**********************************	**********
*	1-648-763-11	KARAOKE.RELAY BOARD *******************	
		< CAPACITOR >	
C710	1-124-927-11	ELECT 4.7uF 20% 100V	(C50:E,EA,AUS,SP,PX)
C711	1-164-161-11	CERAMIC CHIP 0.0022uF 10% 100V	(C50:E,EA,AUS,SP,PX)
C712	1-163-022-00	CERAMIC CHIP 0.012uF 10% 50V	(C50:E,EA,AUS,SP,PX)
C713	1-163-109-00	CERAMIC CHIP 47PF 5% 50V	(C50:E,EA,AUS,SP,PX)
C714	1-163-109-00	CERAMIC CHIP 47PF 5% 50V	(C50:E,EA,AUS,SP,PX)
C715	1-124-927-11	ELECT 4.7uF 20% 100V	(C50:E,EA,AUS,SP,PX)
C760	1-124-927-11	ELECT 4.7uF 20% 100V	(C50:E,EA,AUS,SP,PX)
C761	1-164-161-11	CERAMIC CHIP 0.0022uF 10% 100V	(C50:E,EA,AUS,SP,PX)
C762	1-163-022-00	CERAMIC CHIP 0.012uF 10% 50V	(C50:E,EA,AUS,SP,PX)
C763	1-163-109-00	CERAMIC CHIP 47PF 5% 50V	(C50:E,EA,AUS,SP,PX)
C764	1-163-109-00	CERAMIC CHIP 47PF 5% 50V	(C50:E,EA,AUS,SP,PX)
C765	1-124-927-11	ELECT 4.7uF 20% 100V	(C50:E,EA,AUS,SP,PX)
		< CONNECTOR >	
CN610	1-695-376-21	PIN, CONNECTOR (PC BOARD) 15P	
CN611	1-695-338-11	PIN, CONNECTOR (PC BOARD) 15P	
		< IC >	
IC603	8-759-636-55	IC M5218AFP	(C50:E,EA,AUS,SP,PX)
IC604	8-759-008-67	IC MC14066BF	(C50:E,EA,AUS,SP,PX)
		< TRANSISTOR >	
Q712	8-729-900-63	TRANSISTOR DTA124ES	(C50:E,EA,AUS,SP,PX)
		< RESISTOR >	
R711	1-216-097-00	METAL CHIP 100K 5% 1/10W	(C50:E,EA,AUS,SP,PX)
R712	1-216-089-91	METAL GLAZE 47K 5% 1/10W	(C50:E,EA,AUS,SP,PX)
R713	1-216-089-91	METAL GLAZE 47K 5% 1/10W	(C50:E,EA,AUS,SP,PX)

Ref. No.	Part No.	Description	Remark
R714	1-216-089-91	METAL GLAZE 47K 5% 1/10W	(C50:E,EA,AUS,SP,PX)
R715	1-216-689-11	METAL CHIP 39K 0.5% 1/10W	(C50:E,EA,AUS,SP,PX)
R716	1-216-097-00	METAL CHIP 100K 5% 1/10W	(C50:E,EA,AUS,SP,PX)
R722	1-216-089-91	METAL GLAZE 47K 5% 1/10W	(C50:E,EA,AUS,SP,PX)
R761	1-216-097-00	METAL CHIP 100K 5% 1/10W	(C50:E,EA,AUS,SP,PX)
R762	1-216-089-91	METAL GLAZE 47K 5% 1/10W	(C50:E,EA,AUS,SP,PX)
R763	1-216-089-91	METAL GLAZE 47K 5% 1/10W	(C50:E,EA,AUS,SP,PX)
R764	1-216-089-91	METAL GLAZE 47K 5% 1/10W	(C50:E,EA,AUS,SP,PX)
R765	1-216-689-11	METAL CHIP 39K 0.5% 1/10W	(C50:E,EA,AUS,SP,PX)
R766	1-216-097-00	METAL CHIP 100K 5% 1/10W	(C50:E,EA,AUS,SP,PX)
**********	**********	**********************************	**********
*	1-644-686-21	LEAF SWITCH BOARD (A,B)(C50U) *****************************	
		< CAPACITOR >	
C1001	1-164-159-11	CERAMIC 0.1uF 50V	
		< CONNECTOR >	
* CN1001	1-568-856-11	SOCKET, CONNECTOR 13P	
CN1002	1-564-517-11	PLUG, CONNECTOR 2P	
		< MOTOR >	
M902	A-2004-188-A	MOTOR ASSY, DC (TRIGGER)	
		< TRANSISTOR >	
Q1001	8-719-710-02	TRANSISTOR PHOTO REFLECTOR NJL5165K-A	
Q1002	8-719-710-02	TRANSISTOR PHOTO REFLECTOR NJL5165K-A	
		< RESISTOR >	
R1001	1-249-411-11	CARBON 330 5% 1/4W	
R1002	1-249-411-11	CARBON 330 5% 1/4W	
		< SWITCH >	
S1001	1-572-202-11	SWITCH, LEAF (HALF)	
S1002	1-572-125-11	SWITCH, LEAF (70u/120u)	
S1003	1-572-125-11	SWITCH, LEAF (REC CLAW)	
S1004	1-572-125-11	SWITCH, LEAF (70u/120u)	
S1005	1-572-202-11	SWITCH, LEAF (HALF)	
S1006	1-572-125-11	SWITCH, LEAF (METAL)	

Ref.No.	Part No.	Description	Remark
S1007	1-692-193-11	SWITCH, PUSH (1 KEY)(STOP)	
S1008	1-692-193-11	SWITCH, PUSH (1 KEY)(STOP)	

`**************************************************************`

Ref.No.	Part No.	Description	Remark
*	A-4360-827-A	MAIN BOARD, COMPLETE (C50:CND/C50U) ********************	
*	A-4360-960-A	MAIN BOARD, COMPLETE (C50:IT,G) ********************	
*	A-4360-964-A	MAIN BOARD, COMPLETE (C50:AEP,UK) ********************	
*	A-4360-976-A	MAIN BOARD, COMPLETE ********************	(C50:E,EA,AUS,SP,PX)
*	A-4365-148-A	MAIN BOARD, COMPLETE (C50:EE) ********************	
*	1-690-880-31	LEAD (WITH CONNECTOR)	(C50:AEP,UK,IT,G,EE,E,EA,AUS,SP,PX)
	7-682-548-04	SCREW +BATT 3X8 (S)	

< CAPACITOR >

Ref.No.	Part No.	Description				Remark
C1	1-101-005-00	CERAMIC	22000PF		50V	
C2	1-124-907-11	ELECT	10uF	20%	50V	
C3	1-161-379-00	CERAMIC	0.01uF	20%	25V	
C4	1-162-294-31	CERAMIC	0.001uF	10%	50V	
C5	1-161-379-00	CERAMIC	0.01uF	20%	25V	
C6	1-164-159-11	CERAMIC	0.1uF		50V	(C50:AEP,UK,EE,E,EA,AUS,SP,PX)
C7	1-162-196-31	CERAMIC	5.6PF	10%	50V	(C50:AEP,UK,EE)
C7	1-162-198-31	CERAMIC	8.2PF	10%	50V	(C50:CND,IT,G,E,EA,AUS,SP,PX/C50U)
C8	1-101-005-00	CERAMIC	22000PF		50V	(C50:AEP,UK,EE)
C8	1-101-006-00	CERAMIC	0.047uF		50V	(C50:E,EA,AUS,SP,PX)
C9	1-162-195-31	CERAMIC	4.7PF	10%	50V	(C50:E,EA,AUS,SP,PX)
C10	1-102-120-00	CERAMIC	0.0018uF	10%	50V	(C50:AEP,UK,EE)
C11	1-161-374-11	CERAMIC	0.0015uF	20%	50V	(C50:AEP,UK,EE)
C12	1-130-492-11	MYLAR	0.056uF	5%	50V	(C50:E,EA,AUS,SP,PX)
C21	1-164-056-11	CERAMIC	27PF	5%	50V	
C22	1-164-056-11	CERAMIC	27PF	5%	50V	
C23	1-161-379-00	CERAMIC	0.01uF	20%	25V	
C24	1-161-379-00	CERAMIC	0.01uF	20%	25V	
C25	1-161-379-00	CERAMIC	0.01uF	20%	25V	
C26	1-124-907-11	ELECT	10uF	20%	50V	
C27	1-161-379-00	CERAMIC	0.01uF	20%	25V	
C29	1-161-379-00	CERAMIC	0.01uF	20%	25V	
C30	1-124-907-11	ELECT	10uF	20%	50V	
C31	1-124-925-11	ELECT	2.2uF	20%	100V	
C32	1-161-379-00	CERAMIC	0.01uF	20%	25V	
C33	1-124-463-00	ELECT	0.1uF	20%	50V	
C34	1-124-902-00	ELECT	0.47uF	20%	50V	(C50:AEP,UK,EE)
C35	1-101-005-00	CERAMIC	22000PF		50V	(C50:AEP,UK,EE)
C36	1-101-005-00	CERAMIC	22000PF		50V	(C50:AEP,UK,EE)
C51	1-124-907-11	ELECT	10uF	20%	50V	
C52	1-161-379-00	CERAMIC	0.01uF	20%	25V	
C53	1-162-282-31	CERAMIC	100PF	10%	50V	
C54	1-161-379-00	CERAMIC	0.01uF	20%	25V	
C55	1-161-379-00	CERAMIC	0.01uF	20%	25V	
C57	1-124-925-11	ELECT	2.2uF	20%	100V	
C58	1-124-903-11	ELECT	1uF	20%	50V	
C59	1-161-379-00	CERAMIC	0.01uF	20%	25V	
C60	1-124-903-11	ELECT	1uF	20%	50V	
C61	1-130-484-00	MYLAR	0.012uF	5%	50V	(C50:AEP,UK,IT,G,EE,E,EA,AUS,SP,PX)
C61	1-130-486-00	MYLAR	0.018uF	10%	50V	(C50:CND/C50U)
C62	1-130-484-00	MYLAR	0.012uF	5%	50V	(C50:AEP,UK,IT,G,EE,E,EA,AUS,SP,PX)
C62	1-130-486-00	MYLAR	0.018uF	10%	50V	(C50:CND/C50U)
C63	1-124-903-11	ELECT	1uF	20%	50V	
C64	1-124-903-11	ELECT	1uF	20%	50V	
C66	1-124-903-11	ELECT	1uF	20%	50V	
C67	1-124-903-11	ELECT	1uF	20%	50V	
C68	1-161-046-00	CERAMIC	0.0039uF	10%	25V	
C69	1-161-046-00	CERAMIC	0.0039uF	10%	25V	
C71	1-162-293-31	CERAMIC	820PF	10%	50V	(C50:IT,G)
C72	1-162-293-31	CERAMIC	820PF	10%	50V	(EXCEPT C50:IT,G)
C73	1-124-903-11	ELECT	1uF	20%	50V	
C75	1-161-377-00	CERAMIC	0.0047uF	30%	16V	
C76	1-124-907-11	ELECT	10uF	20%	50V	(C50:IT,G)
C76	1-124-916-11	ELECT	22uF	20%	63V	(EXCEPT C50:IT,G)
C77	1-161-379-00	CERAMIC	0.01uF	20%	25V	
C78	1-123-382-00	ELECT	3.3uF	20%	100V	
C79	1-161-379-00	CERAMIC	0.01uF	20%	25V	
C80	1-161-379-00	CERAMIC	0.01uF	20%	25V	
C81	1-161-379-00	CERAMIC	0.01uF	20%	25V	
C82	1-162-207-31	CERAMIC	22PF	5%	50V	(C50:AEP,UK,EE)

MAIN

Ref. No.	Part No.	Description	Remark
C92	1-124-907-11	ELECT 10uF 20% 50V	
C93	1-161-379-00	CERAMIC 0.01uF 20% 25V	
C94	1-164-159-11	CERAMIC 0.1uF 50V	
C96	1-124-907-11	ELECT 10uF 20% 50V	
C100	1-162-207-31	CERAMIC 22PF 5% 50V	
C101	1-124-916-11	ELECT 22uF 20% 63V	
C103	1-162-282-11	CERAMIC 100PF 10% 50V	
C104	1-162-282-11	CERAMIC 100PF 10% 50V	
C105	1-162-282-11	CERAMIC 100PF 10% 50V	
C701	1-162-286-31	CERAMIC 220PF 10% 50V	(C50:IT,G)
C706	1-162-282-31	CERAMIC 100PF 10% 50V	(C50:IT,G)
C721	1-162-215-31	CERAMIC 47PF 5% 50V	
C727	1-124-925-11	ELECT 2.2uF 20% 100V	
C731	1-124-927-11	ELECT 4.7uF 20% 100V	
C732	1-164-159-11	CERAMIC 0.1uF 50V	
C733	1-124-927-11	ELECT 4.7uF 20% 100V	
C734	1-162-215-31	CERAMIC 47PF 5% 50V	
C735	1-124-252-00	ELECT 0.33uF 20% 50V	
C736	1-124-902-00	ELECT 0.47uF 20% 50V	
C737	1-124-903-11	ELECT 1uF 20% 50V	
C740	1-124-477-11	ELECT 47uF 20% 25V	
C741	1-130-493-00	MYLAR 0.068uF 5% 50V	
C742	1-130-484-00	MYLAR 0.012uF 5% 50V	
C743	1-106-353-00	MYLAR 0.0027uF 5% 50V	
C744	1-130-487-00	MYLAR 0.022uF 5% 50V	
C745	1-124-927-11	ELECT 4.7uF 20% 100V	
C746	1-124-907-11	ELECT 10uF 20% 50V	
C747	1-124-927-11	ELECT 4.7uF 20% 100V	
C751	1-162-286-31	CERAMIC 220PF 10% 50V	(C50:IT,G)
C756	1-162-282-31	CERAMIC 100PF 10% 50V	(C50:IT,G)
C771	1-162-215-31	CERAMIC 47PF 5% 50V	
C781	1-124-927-11	ELECT 4.7uF 20% 100V	
C783	1-124-927-11	ELECT 4.7uF 20% 100V	
C784	1-162-215-31	CERAMIC 47PF 5% 50V	
C785	1-124-252-00	ELECT 0.33uF 20% 50V	
C786	1-124-902-00	ELECT 0.47uF 20% 50V	
C790	1-124-477-11	ELECT 47uF 20% 25V	
C791	1-130-493-00	MYLAR 0.068uF 5% 50V	
C792	1-130-484-00	MYLAR 0.012uF 5% 50V	
C793	1-106-353-00	MYLAR 0.0027uF 5% 50V	
C794	1-130-487-00	MYLAR 0.022uF 5% 50V	
C795	1-124-927-11	ELECT 4.7uF 20% 100V	
C801	1-162-286-31	CERAMIC 220PF 10% 50V	(C50:AEP,UK,IT,G,EE)
C802	1-162-286-31	CERAMIC 220PF 10% 50V	(C50:AEP,UK,IT,G,EE)
C803	1-124-927-11	ELECT 4.7uF 20% 100V	(C50:AEP,UK,IT,G,EE)
C804	1-102-126-00	CERAMIC 0.0056uF 10% 50V	(C50:AEP,UK,IT,G,EE)
C805	1-102-119-00	CERAMIC 1500PF 10% 50V	(C50:AEP,UK,IT,G,EE)
C806	1-124-903-11	ELECT 1uF 20% 50V	(C50:AEP,UK,IT,G,EE)
C807	1-162-282-31	CERAMIC 100PF 10% 50V	(C50:IT,G)
C821	1-162-286-31	CERAMIC 220PF 10% 50V	(C50:AEP,UK,IT,G,EE)
C822	1-162-286-31	CERAMIC 220PF 10% 50V	(C50:AEP,UK,IT,G,EE)
C823	1-124-927-11	ELECT 4.7uF 20% 100V	(C50:AEP,UK,IT,G,EE)
C824	1-102-126-00	CERAMIC 0.0056uF 10% 50V	(C50:AEP,UK,IT,G,EE)
C825	1-102-119-00	CERAMIC 1500PF 10% 50V	(C50:AEP,UK,IT,G,EE)
C826	1-124-903-11	ELECT 1uF 20% 50V	(C50:AEP,UK,IT,G,EE)
C827	1-162-282-31	CERAMIC 100PF 10% 50V	(C50:IT,G)
C841	1-124-477-11	ELECT 47uF 20% 25V	
C842	1-124-122-11	ELECT 100uF 20% 50V	

< FILTER >

Ref. No.	Part No.	Description	Remark
CF1	1-567-389-11	FILTER, CERAMIC	
CF2	1-567-389-11	FILTER, CERAMIC	(C50:IT,G)
CF51	1-567-389-11	FILTER, CERAMIC	

< CONNECTOR >

Ref. No.	Part No.	Description	Remark
CN701	1-750-180-11	PIN, CONNECTOR (PC BOARD) 5P	
CN702	1-695-089-11	PIN, CONNECTOR (PC BOARD) 11P	
CN703	1-695-087-11	PIN, CONNECTOR (PC BOARD) 7P	
CN704	1-691-644-11	SOCKET, CONNECTOR 7P	
CN705	1-564-511-11	PLUG, CONNECTOR 8P	(C50:E,EA,AUS,SP,PX)
* CN707	1-564-505-11	PLUG, CONNECTOR 2P	(C50:AEP,UK,IT,G,EE,E,EA,AUS,SP,PX)
CN750	1-564-505-11	PLUG, CONNECTOR 2P	(C50:AEP,UK,IT,G,EE)
CN751	1-564-506-11	PLUG, CONNECTOR 3P	(C50:AEP,UK,IT,G,EE)
CN801	1-695-342-31	PIN, CONNECTOR (PC BOARD) 19P	
* CN802	1-565-561-11	PIN, CONNECTOR 3P (AU BUS)	

< VARIABLE CAPACITOR >

Ref. No.	Part No.	Description	Remark
CV1	1-141-227-00	CAP, TRIMMER 20PF	(C50:E,EA,AUS,SP,PX)
CV2	1-141-227-00	CAP, TRIMMER 20PF	(C50:E,EA,AUS,SP,PX)

< DIODE >

Ref. No.	Part No.	Description	Remark
D1	8-719-976-30	DIODE KV1560N	(C50:E,EA,AUS,SP,PX)
D21	8-719-933-33	DIODE HZS6A1L	
D51	8-719-987-63	DIODE 1N4148M	

Ref.No.	Part No.	Description	Remark
D703	8-719-987-63	DIODE 1N4148M	
D704	8-719-987-63	DIODE 1N4148M	
D705	8-719-987-63	DIODE 1N4148M	
D841	8-719-987-63	DIODE 1N4148M	
D861	8-719-987-63	DIODE 1N4148M	
D862	8-719-987-63	DIODE 1N4148M	
		< FRONTEND >	
FE1	1-465-007-11	FRONT END (FM) (4 GANG)	(C50:IT,G)
FE1	1-465-396-11	FRONT END (3 GANG)	(C50:EE)
FE1	1-465-673-11	FRONT END (2 BAND)	(C50:CND,AEP,UK,E,EA,AUS,SP,PX/C50U)
FE2	1-239-261-12	ENCAPSULATED COMPONENT	(C50:AEP,UK,EE)
FE2	1-239-262-11	ENCAPSULATED COMPONENT	(C50:E,EA,AUS,SP,PX)
FE2	1-239-634-11	ENCAPSULATED COMPONENT, AM.RF	(C50:CND,IT,G/C50U)
FE3	1-236-463-11	ENCAPSULATED COMPONENT	(C50:AEP,UK,EE)
		< IC >	
IC21	8-759-820-91	IC LC7218	
IC51	8-759-090-40	IC LA1831	
IC701	8-759-000-48	IC MC14052BCP	
IC702	8-759-634-50	IC M5218AL	
IC703	8-759-000-49	IC uPD4066BC	
IC704	8-759-634-50	IC M5218AL	
IC705	8-759-072-32	IC TC9184P	
IC706	8-759-634-50	IC M5218AL	
IC801	8-759-634-51	IC M5218AP	(C50:AEP,UK,IT,G,EE)
IC802	8-759-000-49	IC uPD4066BC	(C50:AEP,UK,IT,G,EE)
IC841	8-759-635-31	IC M50253P	
		< IFT >	
IFT51	1-404-713-11	TRANSFORMER, IF	
		< JACK >	
J701	1-569-181-11	JACK, PIN 2P (MD/PHONO IN)	
J702	1-569-181-11	JACK, PIN 2P (MD PHONO OUT)	
		< COIL >	
L1	1-408-425-00	INDUCTOR 220uH	(C50:AEP,UK,EE)
L21	1-410-521-11	INDUCTOR 100uH	
L51	1-408-399-00	INDUCTOR 1.5uH	
		< FILTER >	
LPF51	1-239-597-11	FILTER, LOW PASS	
LPF52	1-239-597-11	FILTER, LOW PASS	

Ref.No.	Part No.	Description	Remark
		< TRANSISTOR >	
Q1	8-729-620-19	TRANSISTOR 2SC2724-CD	
Q2	8-729-620-19	TRANSISTOR 2SC2724-CD	(C50:IT,G)
Q3	8-729-119-76	TRANSISTOR 2SA1175-HFE	
Q4	8-729-119-76	TRANSISTOR 2SA1175-HFE	(C50:AEP,UK,EE,E,EA,AUS,SP,PX)
Q5	8-729-119-76	TRANSISTOR 2SA1175-HFE	(C50:AEP,UK,EE,E,EA,AUS,SP,PX)
Q6	8-729-900-36	TRANSISTOR DTC124ES	(C50:AEP,UK,EE,E,EA,AUS,SP,PX)
Q7	8-729-900-36	TRANSISTOR DTC124ES	(C50:AEP,UK,EE,E,EA,AUS,SP,PX)
Q8	8-729-900-36	TRANSISTOR DTC124ES	(C50:AEP,UK,EE,E,EA,AUS,SP,PX)
Q9	8-729-620-05	TRANSISTOR 2SC2603-EF	(C50:AEP,UK,EE,E,EA,AUS,SP,PX)
Q21	8-729-202-67	TRANSISTOR 2SK246-GR3	
Q22	8-729-201-83	TRANSISTOR 2SC3112-A	
Q23	8-729-202-67	TRANSISTOR 2SK246-GR3	(C50:AEP,UK,EE)
Q24	8-729-201-83	TRANSISTOR 2SC3112-A	(C50:AEP,UK,EE)
Q51	8-729-620-05	TRANSISTOR 2SC2603-EF	
Q52	8-729-620-05	TRANSISTOR 2SC2603-EF	
Q53	8-729-900-36	TRANSISTOR DTC124ES	
Q701	8-729-900-63	TRANSISTOR DTA124ES	
Q702	8-729-900-36	TRANSISTOR DTC124ES	
Q731	8-729-224-61	TRANSISTOR 2SK246-Y	
Q732	8-729-224-61	TRANSISTOR 2SK246-Y	
Q733	8-729-620-05	TRANSISTOR 2SC2603-EF	
Q741	8-729-141-30	TRANSISTOR 2SC3623A-LK	
Q782	8-729-224-61	TRANSISTOR 2SK246-Y	
Q783	8-729-620-05	TRANSISTOR 2SC2603-EF	
Q791	8-729-141-30	TRANSISTOR 2SC3623A-LK	
Q841	8-729-900-63	TRANSISTOR DTA124ES	
Q842	8-729-900-63	TRANSISTOR DTA124ES	
Q843	8-729-900-63	TRANSISTOR DTA124ES	
		< RESISTOR >	
R1	1-249-411-11	CARBON 330 5% 1/4W	
R2	1-249-411-11	CARBON 330 5% 1/4W	
R3	1-247-891-00	CARBON 330K 5% 1/4W	
R4	1-249-411-11	CARBON 330 5% 1/4W	
R5	1-247-891-00	CARBON 330K 5% 1/4W	(C50:IT,G)
R6	1-249-411-11	CARBON 330 5% 1/4W	(C50:IT,G)
R7	1-249-402-11	CARBON 56 5% 1/4W F	(C50:IT,G)
R7	1-249-405-11	CARBON 100 5% 1/4W F	(EXCEPT C50:IT,G)
R8	1-249-429-11	CARBON 10K 5% 1/4W	(C50:AEP,UK,EE,E,EA,AUS,SP,PX)

MAIN

Ref. No.	Part No.	Description	Remark
R9	1-249-429-11	CARBON 10K 5% 1/4W	(C50:AEP, UK, EE, E, EA, AUS, SP, PX)
R10	1-249-437-11	CARBON 47K 5% 1/4W	
R11	1-249-437-11	CARBON 47K 5% 1/4W	
R12	1-249-425-11	CARBON 4.7K 5% 1/4W F	(C50:AEP, UK, EE, E, EA, AUS, SP, PX)
R13	1-247-903-00	CARBON 1M 5% 1/4W	(C50:E, EA, AUS, SP, PX)
R13	1-249-437-11	CARBON 47K 5% 1/4W	(C50:AEP, UK, EE)
R14	1-249-437-11	CARBON 47K 5% 1/4W	(C50:E, EA, AUS, SP, PX)
R14	1-249-429-11	CARBON 10K 5% 1/4W	(C50:AEP, UK, EE)
R15	1-249-429-11	CARBON 10K 5% 1/4W	(C50:AEP, UK, EE, E, EA, AUS, SP, PX)
R17	1-247-903-00	CARBON 1M 5% 1/4W	(C50:AEP, UK, EE)
R18	1-249-429-11	CARBON 10K 5% 1/4W	(C50:AEP, UK, EE, E, EA, AUS, SP, PX)
R19	1-249-429-11	CARBON 10K 5% 1/4W	(C50:AEP, UK, EE, E, EA, AUS, SP, PX)
R20	1-249-417-11	CARBON 1K 5% 1/4W F	
R21	1-249-417-11	CARBON 1K 5% 1/4W F	
R22	1-249-417-11	CARBON 1K 5% 1/4W F	
R23	1-249-417-11	CARBON 1K 5% 1/4W F	
R24	1-249-405-11	CARBON 100 5% 1/4W F	
R25	1-249-425-11	CARBON 4.7K 5% 1/4W F	
R26	1-249-417-11	CARBON 1K 5% 1/4W F	
R27	1-249-405-11	CARBON 100 5% 1/4W F	
R28	1-249-405-11	CARBON 100 5% 1/4W F	
R30	1-249-423-11	CARBON 3.3K 5% 1/4W F	
R31	1-249-414-11	CARBON 560 5% 1/4W F	
R32	1-249-417-11	CARBON 1K 5% 1/4W F	
R33	1-249-410-11	CARBON 270 5% 1/4W F	
R34	1-249-425-11	CARBON 4.7K 5% 1/4W F	
R35	1-249-421-11	CARBON 2.2K 5% 1/4W F	
R36	1-249-425-11	CARBON 4.7K 5% 1/4W F	
R37	1-249-425-11	CARBON 4.7K 5% 1/4W F	
R38	1-249-405-11	CARBON 100 5% 1/4W F	
R39	1-249-423-11	CARBON 3.3K 5% 1/4W F	(C50:AEP, UK, EE)
R40	1-249-414-11	CARBON 560 5% 1/4W F	(C50:AEP, UK, EE)
R41	1-249-417-11	CARBON 1K 5% 1/4W F	(C50:AEP, UK, EE)
R42	1-249-410-11	CARBON 270 5% 1/4W F	(C50:AEP, UK, EE)
R43	1-249-433-11	CARBON 22K 5% 1/4W	(C50:AEP, UK, EE)
R44	1-249-421-11	CARBON 2.2K 5% 1/4W F	(C50:AEP, UK, EE)

Ref. No.	Part No.	Description	Remark
R45	1-249-425-11	CARBON 4.7K 5% 1/4W F	(C50:AEP, UK, EE)
R46	1-249-425-11	CARBON 4.7K 5% 1/4W F	(C50:AEP, UK, EE)
R47	1-249-417-11	CARBON 1K 5% 1/4W F	(C50:AEP, UK, EE, E, EA, AUS, SP, PX)
R51	1-249-423-11	CARBON 3.3K 5% 1/4W F	
R52	1-249-425-11	CARBON 4.7K 5% 1/4W F	
R53	1-249-412-11	CARBON 390 5% 1/4W F	
R54	1-247-870-11	CARBON 43K 5% 1/4W	
R55	1-249-429-11	CARBON 10K 5% 1/4W	
R56	1-247-842-11	CARBON 3K 5% 1/4W	
R57	1-249-429-11	CARBON 10K 5% 1/4W	
R58	1-249-437-11	CARBON 47K 5% 1/4W	
R59	1-249-417-11	CARBON 1K 5% 1/4W F	
R60	1-249-417-11	CARBON 1K 5% 1/4W F	
R61	1-247-891-00	CARBON 330K 5% 1/4W	
R62	1-247-891-00	CARBON 330K 5% 1/4W	
R63	1-249-421-11	CARBON 2.2K 5% 1/4W F	
R64	1-249-421-11	CARBON 2.2K 5% 1/4W F	
R66	1-249-395-11	CARBON 15 5% 1/4W F	(C50:E, EA, AUS, SP, PX)
R69	1-249-399-11	CARBON 33 5% 1/4W F	
R70	1-249-417-11	CARBON 1K 5% 1/4W F	(C50:AEP, UK, EE)
⚠R91	1-247-696-11	CARBON 47 5% 1/4W	
R92	1-249-405-11	CARBON 100 5% 1/4W F	
R100	1-249-429-11	CARBON 10K 5% 1/4W	
R101	1-249-429-11	CARBON 10K 5% 1/4W	
R102	1-249-417-11	CARBON 1K 5% 1/4W F	
R103	1-249-417-11	CARBON 1K 5% 1/4W F	
R104	1-249-417-11	CARBON 1K 5% 1/4W F	
R701	1-249-417-11	CARBON 1K 5% 1/4W F	
R702	1-247-868-11	CARBON 36K 5% 1/4W	
R703	1-249-429-11	CARBON 10K 5% 1/4W	
R704	1-249-429-11	CARBON 10K 5% 1/4W	
R705	1-249-437-11	CARBON 47K 5% 1/4W	
R706	1-249-417-11	CARBON 1K 5% 1/4W F	
R708	1-249-441-11	CARBON 100K 5% 1/4W	(C50:AEP, UK, IT, G, EE)
R709	1-249-441-11	CARBON 100K 5% 1/4W	
R710	1-249-429-11	CARBON 10K 5% 1/4W	
R711	1-249-417-11	CARBON 1K 5% 1/4W F	
R717	1-249-417-11	CARBON 1K 5% 1/4W F	
R723	1-249-429-11	CARBON 10K 5% 1/4W	
R724	1-247-858-11	CARBON 13K 5% 1/4W	
R725	1-249-429-11	CARBON 10K 5% 1/4W	(C50:AEP, UK, IT, G, EE, E, EA, AUS, SP, PX)
R726	1-247-842-11	CARBON 3K 5% 1/4W	
R727	1-249-441-11	CARBON 100K 5% 1/4W	
R729	1-249-433-11	CARBON 22K 5% 1/4W	
R730	1-249-429-11	CARBON 10K 5% 1/4W	

The components identified by mark ⚠ or dotted line with mark ⚠ are critical for safety. Replace only with part number specified.	Les composants identifiés par une marque ⚠ sont critiques pour la sécurité. Ne les remplacer que par une piéce portant le numéro spécifié.

Ref. No.	Part No.	Description	Remark
R731	1-249-420-11	CARBON 1.8K 5% 1/4W	F (C50:CND/C50U)
R731	1-249-421-11	CARBON 2.2K 5% 1/4W	F (C50:AEP, UK, IT, G, EE, E, EA, AUS, SP, PX)
R732	1-249-425-11	CARBON 4.7K 5% 1/4W	F
R733	1-249-440-11	CARBON 82K 5% 1/4W	
R734	1-247-895-00	CARBON 470K 5% 1/4W	
R735	1-249-414-11	CARBON 560 5% 1/4W	F
R736	1-249-441-11	CARBON 100K 5% 1/4W	
R737	1-249-439-11	CARBON 68K 5% 1/4W	
R738	1-249-411-11	CARBON 330 5% 1/4W	
R739	1-249-423-11	CARBON 3.3K 5% 1/4W	F
R741	1-249-425-11	CARBON 4.7K 5% 1/4W	F
R742	1-249-436-11	CARBON 39K 5% 1/4W	
R743	1-247-897-11	CARBON 560K 5% 1/4W	
R744	1-249-434-11	CARBON 27K 5% 1/4W	
R745	1-249-426-11	CARBON 5.6K 5% 1/4W	
R746	1-249-418-11	CARBON 1.2K 5% 1/4W	F
R747	1-249-441-11	CARBON 100K 5% 1/4W	
R748	1-249-423-11	CARBON 3.3K 5% 1/4W	F
R749	1-247-823-11	CARBON 470 5% 1/4W	F
R751	1-249-417-11	CARBON 1K 5% 1/4W	F
R752	1-247-868-11	CARBON 36K 5% 1/4W	
R756	1-249-417-11	CARBON 1K 5% 1/4W	F
R760	1-249-429-11	CARBON 10K 5% 1/4W	
R761	1-249-417-11	CARBON 1K 5% 1/4W	F
R767	1-249-417-11	CARBON 1K 5% 1/4W	F
R773	1-249-429-11	CARBON 10K 5% 1/4W	
R774	1-247-858-11	CARBON 13K 5% 1/4W	
R775	1-249-429-11	CARBON 10K 5% 1/4W	(C50:AEP, UK, IT, G, EE, E, EA, AUS, SP, PX)
R776	1-247-842-11	CARBON 3K 5% 1/4W	
R779	1-249-433-11	CARBON 22K 5% 1/4W	
R780	1-249-429-11	CARBON 10K 5% 1/4W	
R781	1-249-420-11	CARBON 1.8K 5% 1/4W	F (C50:CND/C50U)
R781	1-249-421-11	CARBON 2.2K 5% 1/4W	F (C50:AEP, UK, IT, G, EE, E, EA, AUS, SP, PX)
R782	1-247-903-00	CARBON 1M 5% 1/4W	
R783	1-249-440-11	CARBON 82K 5% 1/4W	
R784	1-247-895-00	CARBON 470K 5% 1/4W	
R785	1-249-414-11	CARBON 560 5% 1/4W	F
R786	1-249-441-11	CARBON 100K 5% 1/4W	
R787	1-249-439-11	CARBON 68K 5% 1/4W	
R788	1-249-411-11	CARBON 330 5% 1/4W	
R789	1-249-423-11	CARBON 3.3K 5% 1/4W	F
R791	1-249-425-11	CARBON 4.7K 5% 1/4W	F
R792	1-249-436-11	CARBON 39K 5% 1/4W	
R793	1-247-897-11	CARBON 560K 5% 1/4W	
R794	1-249-434-11	CARBON 27K 5% 1/4W	
R795	1-249-426-11	CARBON 5.6K 5% 1/4W	
R796	1-249-418-11	CARBON 1.2K 5% 1/4W	F
R797	1-249-441-11	CARBON 100K 5% 1/4W	
R798	1-249-423-11	CARBON 3.3K 5% 1/4W	F
R801	1-249-411-11	CARBON 330 5% 1/4W	(C50:AEP, UK, IT, G, EE)
R802	1-249-433-11	CARBON 22K 5% 1/4W	(C50:AEP, UK, IT, G, EE)
R803	1-249-417-11	CARBON 1K 5% 1/4W	F (C50:AEP, UK, IT, G, EE)
R804	1-247-897-11	CARBON 560K 5% 1/4W	(C50:AEP, UK, IT, G, EE)
R805	1-249-437-11	CARBON 47K 5% 1/4W	(C50:AEP, UK, IT, G, EE)
R806	1-249-430-11	CARBON 12K 5% 1/4W	(C50:AEP, UK, IT, G, EE)
R821	1-249-411-11	CARBON 330 5% 1/4W	(C50:AEP, UK, IT, G, EE)
R822	1-249-433-11	CARBON 22K 5% 1/4W	(C50:AEP, UK, IT, G, EE)
R823	1-249-417-11	CARBON 1K 5% 1/4W	F (C50:AEP, UK, IT, G, EE)
R824	1-247-897-11	CARBON 560K 5% 1/4W	(C50:AEP, UK, IT, G, EE)
R825	1-249-437-11	CARBON 47K 5% 1/4W	(C50:AEP, UK, IT, G, EE)
R826	1-249-430-11	CARBON 12K 5% 1/4W	(C50:AEP, UK, IT, G, EE)
R841	1-249-437-11	CARBON 47K 5% 1/4W	
R842	1-249-437-11	CARBON 47K 5% 1/4W	
R843	1-249-437-11	CARBON 47K 5% 1/4W	
R850	1-249-405-11	CARBON 100 5% 1/4W	F
R851	1-249-417-11	CARBON 1K 5% 1/4W	F
R852	1-249-437-11	CARBON 47K 5% 1/4W	
R853	1-249-441-11	CARBON 100K 5% 1/4W	
R857	1-249-417-11	CARBON 1K 5% 1/4W	F

< VARIABLE RESISTOR >

Ref. No.	Part No.	Description	Remark
RV51	1-241-631-21	RES, ADJ, CARBON 22K	

< TRANSFORMER >

Ref. No.	Part No.	Description	Remark
T1	1-402-424-11	COIL (ANT, SW3)	(C50:E, EA, AUS, SP, PX)
T2	1-402-960-11	COIL (OSC SW3)	(C50:E, EA, AUS, SP, PX)
T51	1-236-465-11	ENCAPSULATED COMPONENT	(C50:IT, G)

< TERMINAL >

Ref. No.	Part No.	Description	Remark
TB1	1-537-238-21	TERMINAL BOARD (ANTENNA)	(C50:CND, E, EA, AUS, SP, PX/C50U)
TB1	1-537-488-11	TERMINAL BOARD (ANTENNA)	(C50:AEP, UK, IT, G, EE)

< VIBRATOR >

Ref. No.	Part No.	Description	Remark
X21	1-577-126-21	VIBRATOR, CRYSTAL (7.2MHz)	

Ref. No.	Part No.	Description			Remark
X51	1-579-777-11	DISCRIMINATOR, CERAMIC (10.7MHz)			
X52	1-577-075-11	OSCILLATOR, CERAMIC (456kHz)			

****

* A-2006-399-A MD-A BOARD COMPLETE (C50)

****

< CAPACITOR >

C11	1-163-131-00	CERAMIC CHIP	390PF	5%	50V
C12	1-136-157-00	FILM	0.022uF	5%	50V
C13	1-124-234-00	ELECT	22uF	20%	16V
C18	1-163-117-00	CERAMIC CHIP	100PF	5%	50V
C21	1-163-131-00	CERAMIC CHIP	390PF	5%	50V
C22	1-136-157-00	FILM	0.022uF	5%	50V
C23	1-124-234-00	ELECT	22uF	20%	16V
C28	1-163-117-00	CERAMIC CHIP	100PF	5%	50V
C31	1-124-234-00	ELECT	22uF	20%	16V
C32	1-124-234-00	ELECT	22uF	20%	16V
C72	1-124-499-11	ELECT, NONPOLAR	1uF	20%	50V

< CONNECTOR >

* CNJ31	1-580-782-11	CONNECTOR, BOARD TO BOARD 10P
* CNJ72	1-580-411-11	SOCKET, CONNECTOR 4P
* CNP32	1-580-772-11	PIN, CONNECTOR (PC BOARD) 4P
* CNP71	1-564-719-11	PIN, CONNECTOR (SMALL TYPE) 3P

< HEAD >

HP101	A-2003-837-F	DECK ASSY, HEAD (DECK A)

< IC >

IC31A	8-759-106-02	IC uPC4570G2

< JUMPER RESISTOR >

JW1	1-216-295-00	METAL CHIP	0	5%	1/10W
JW51	1-216-296-00	METAL CHIP	0	5%	1/8W
JW52	1-216-296-00	METAL CHIP	0	5%	1/8W
JW53	1-216-296-00	METAL CHIP	0	5%	1/8W
JW54	1-216-296-00	METAL CHIP	0	5%	1/8W

< MOTOR >

M101A	X-3363-501-1	MOTOR, REEL ASSY (DECK A)
M102A	X-3365-377-1	MOTOR, CAPSTAN ASSY (DECK A)

< TRANSISTOR >

Q71A	8-729-602-36	TRANSISTOR 2SA1602

< RESISTOR >

R11	1-216-099-00	METAL CHIP	120K	5%	1/10W
R12	1-216-025-00	METAL CHIP	100	5%	1/10W
R13	1-216-100-00	METAL GLAZE	130K	5%	1/10W
R14	1-216-067-91	METAL GLAZE	5.6K	5%	1/10W
R21	1-216-099-00	METAL CHIP	120K	5%	1/10W
R22	1-216-025-00	METAL CHIP	100	5%	1/10W
R23	1-216-100-00	METAL GLAZE	130K	5%	1/10W
R24	1-216-067-91	METAL GLAZE	5.6K	5%	1/10W
R31	1-216-033-00	METAL CHIP	220	5%	1/10W
R32	1-216-033-00	METAL CHIP	220	5%	1/10W
R71	1-216-082-00	METAL GLAZE	24K	5%	1/10W
R72	1-216-081-00	METAL CHIP	22K	5%	1/10W
R73	1-216-089-91	METAL GLAZE	47K	5%	1/10W
R74	1-216-089-91	METAL GLAZE	47K	5%	1/10W

< VARIABLE RESISTOR >

RV11A	1-241-627-21	RES, ADJ, CARBON 1K
RV21A	1-241-627-21	RES, ADJ, CARBON 1K
RV71A	1-241-630-21	RES, ADJ, CARBON 10K
RV72A	1-241-630-21	RES, ADJ, CARBON 10K

****

* A-2006-400-A MD-B BOARD COMPLETE (C50)

****

< CAPACITOR >

C11	1-163-131-00	CERAMIC CHIP	390PF	5%	50V
C12	1-136-157-00	FILM	0.022uF	5%	50V
C13	1-124-234-00	ELECT	22uF	20%	16V
C14	1-136-273-91	FILM	75PF	5%	630V
C15	1-164-080-11	CERAMIC	390PF	10%	50V
C17	1-163-103-00	CERAMIC CHIP	27PF	5%	50V
C18	1-163-117-00	CERAMIC CHIP	100PF	5%	50V
C21	1-163-131-00	CERAMIC CHIP	390PF	5%	50V
C22	1-136-157-00	FILM	0.022uF	5%	50V
C23	1-124-234-00	ELECT	22uF	20%	16V
C24	1-136-273-91	FILM	75PF	5%	630V
C25	1-164-080-11	CERAMIC	390PF	10%	50V
C27	1-163-103-00	CERAMIC CHIP	27PF	5%	50V
C28	1-163-117-00	CERAMIC CHIP	100PF	5%	50V
C31	1-124-234-00	ELECT	22uF	20%	16V
C32	1-124-234-00	ELECT	22uF	20%	16V
C33	1-124-234-00	ELECT	22uF	20%	16V
C51	1-163-019-00	CERAMIC CHIP	0.0068uF	10%	50V
C52	1-163-019-00	CERAMIC CHIP	0.0068uF	10%	50V
C53	1-163-022-00	CERAMIC CHIP	0.012uF	10%	50V
C54	1-136-559-11	FILM	0.0047uF	5%	630V
C56	1-164-505-11	CERAMIC CHIP	2.2uF		16V
C57	1-164-346-11	CERAMIC CHIP	1uF		16V
C58	1-163-024-00	CERAMIC CHIP	0.018uF	10%	50V
C72	1-124-499-11	ELECT, NONPOLAR	1uF	20%	50V

Ref. No.	Part No.	Description	Remark
		< CONNECTOR >	
* CNJ31	1-580-782-11	CONNECTOR, BOARD TO BOARD 10P	
* CNJ33	1-580-782-11	CONNECTOR, BOARD TO BOARD 10P	
* CNJ72	1-580-411-11	SOCKET, CONNECTOR 4P	
* CNP32	1-580-781-11	PIN, CONNECTOR (PC BOARD) 7P	
* CNP71	1-564-719-11	PIN, CONNECTOR (SMALL TYPE) 3P	
		< DIODE >	
D31	8-719-016-74	DIODE 1SS352	
		< HEAD >	
HRPE101	A-2003-838-F	DECK ASSY, HEAD (DECK B)	
		< IC >	
IC31B	8-759-106-02	IC uPC4570G2	
		< JUMPER RESISTOR >	
JW1	1-216-296-00	METAL CHIP 0 5% 1/8W	
JW2	1-216-295-00	METAL CHIP 0 5% 1/10W	
JW3	1-216-295-00	METAL CHIP 0 5% 1/10W	
JW4	1-216-295-00	METAL CHIP 0 5% 1/10W	
JW6	1-216-295-00	METAL CHIP 0 5% 1/10W	
JW7	1-216-295-00	METAL CHIP 0 5% 1/10W	
JW52	1-216-296-00	METAL CHIP 0 5% 1/8W	
JW53	1-216-296-00	METAL CHIP 0 5% 1/8W	
JW54	1-216-296-00	METAL CHIP 0 5% 1/8W	
JW55	1-216-296-00	METAL CHIP 0 5% 1/8W	
JW56	1-216-296-00	METAL CHIP 0 5% 1/8W	
JW57	1-216-296-00	METAL CHIP 0 5% 1/8W	
JW58	1-216-296-00	METAL CHIP 0 5% 1/8W	
JW59	1-216-296-00	METAL CHIP 0 5% 1/8W	
JW60	1-216-296-00	METAL CHIP 0 5% 1/8W	
JW61	1-216-296-00	METAL CHIP 0 5% 1/8W	
		< COIL >	
L11	1-410-780-11	INDUCTOR 27mH	
L21	1-410-780-11	INDUCTOR 27mH	
		< MOTOR >	
M101B	X-3363-501-1	MOTOR, REEL ASSY (DECK B)	
M102B	X-3365-377-1	MOTOR, CAPSTAN ASSY (DECK B)	
		< TRANSISTOR >	
Q51	8-729-808-01	TRANSISTOR 2SD1622-S	
Q52	8-729-808-01	TRANSISTOR 2SD1622-S	
Q53	8-729-808-01	TRANSISTOR 2SD1622-S	
Q71B	8-729-602-36	TRANSISTOR 2SA1602	

Ref. No.	Part No.	Description	Remark
		< RESISTOR >	
R11	1-216-099-00	METAL CHIP 120K 5% 1/10W	
R12	1-216-025-00	METAL CHIP 100 5% 1/10W	
R13	1-216-100-00	METAL GLAZE 130K 5% 1/10W	
R14	1-216-067-91	METAL GLAZE 5.6K 5% 1/10W	
⚠R15	1-249-430-11	CARBON 12K 5% 1/4W	
R21	1-216-099-00	METAL CHIP 120K 5% 1/10W	
R22	1-216-025-00	METAL CHIP 100 5% 1/10W	
R23	1-216-100-00	METAL GLAZE 130K 5% 1/10W	
R24	1-216-067-91	METAL GLAZE 5.6K 5% 1/10W	
⚠R25	1-249-430-11	CARBON 12K 5% 1/4W	
R31	1-216-033-00	METAL CHIP 220 5% 1/10W	
R32	1-216-033-00	METAL CHIP 220 5% 1/10W	
⚠R41	1-249-393-11	CARBON 10 5% 1/4W	F
⚠R42	1-249-393-11	CARBON 10 5% 1/4W	F
R51	1-216-075-00	METAL CHIP 12K 5% 1/10W	
R52	1-216-075-00	METAL CHIP 12K 5% 1/10W	
R53	1-216-073-00	METAL CHIP 10K 5% 1/10W	
R54	1-216-309-00	METAL CHIP 5.6 5% 1/10W	
R55	1-216-309-00	METAL CHIP 5.6 5% 1/10W	
R56	1-216-298-00	METAL CHIP 2.2 5% 1/10W	
R71	1-216-082-00	METAL GLAZE 24K 5% 1/10W	
R72	1-216-081-00	METAL CHIP 22K 5% 1/10W	
R73	1-216-089-91	METAL GLAZE 47K 5% 1/10W	
R74	1-216-089-91	METAL GLAZE 47K 5% 1/10W	
		< VARIABLE RESISTOR >	
RV11B	1-241-627-21	RES, ADJ, CARBON 1K	
RV12	1-238-551-11	RES, ADJ, CARBON 220K	
RV21B	1-241-627-21	RES, ADJ, CARBON 1K	
RV22	1-238-551-11	RES, ADJ, CARBON 220K	
RV71B	1-241-630-21	RES, ADJ, CARBON 10K	
RV72B	1-241-630-21	RES, ADJ, CARBON 10K	
		< RELAY >	
RY31	1-515-913-11	RELAY	
		< TRANSFORMER >	
T51	1-406-419-11	COIL, BIAS OSCILLATION	

****

* 1-648-415-11 MIC BOARD

****

(C50:AEP, UK, IT, G, EE, E, EA, AUS, SP, PX)

Ref. No.	Part No.	Description	Remark
		< CAPACITOR >	
C831	1-162-282-31	CERAMIC 100PF 10% 50V	
C832	1-126-301-11	ELECT 1uF 20% 50V	
C833	1-162-282-31	CERAMIC 100PF 10% 50V	

The components identified by mark ⚠ or dotted line with mark ⚠ are critical for safety. Replace only with part number specified.	Les composants identifiés par une marque ⚠ sont critiques pour la sécurité. Ne les remplacer que par une piéce portant le numéro spécifié.

MIC POWER

Ref. No.	Part No.	Description				Remark
C834	1-162-282-31	CERAMIC	100PF	10%	50V	
C835	1-162-282-31	CERAMIC	100PF	10%	50V	
C836	1-126-301-11	ELECT	1uF	20%	50V	
C865	1-124-589-11	ELECT	47uF	20%	16V	
C866	1-124-589-11	ELECT	47uF	20%	16V	
C867	1-164-159-11	CERAMIC	0.1uF		50V	
		< CONNECTOR >				
* CN831	1-564-519-11	PLUG, CONNECTOR 4P				
		< IC >				
IC831	8-759-634-50	IC M5218AL				
		< JACK >				
J831	1-750-032-11	JACK (DIA. 3.5)(MIC)				
		< RESISTOR >				
R831	1-249-429-11	CARBON	10K	5%	1/4W	
R833	1-249-412-11	CARBON	390	5%	1/4W	F
R834	1-249-441-11	CARBON	100K	5%	1/4W	
R835	1-249-441-11	CARBON	100K	5%	1/4W	
R854	1-249-409-11	CARBON	220	5%	1/4W	F
R855	1-249-409-11	CARBON	220	5%	1/4W	F
R856	1-249-417-11	CARBON	1K	5%	1/4W	F
		< VARIABLE RESISTOR >				
RV831	1-223-434-11	RES, VAR, CARBON 50K (MIC LEVEL)				
**						
*	A-4360-826-A	POWER BOARD, COMPLETE (C50U)				
		*********************				
*	A-4360-963-A	POWER BOARD, COMPLETE				
		*********************				
		(C50:AEP, UK, IT, G, EE)				
*	A-4360-975-A	POWER BOARD, COMPLETE (C50:E, EA, SP, PX)				
		*********************				
*	A-4360-979-A	POWER BOARD, COMPLETE (C50:CND)				
		*********************				
*	A-4365-709-A	POWER BOARD, COMPLETE (C50:AUS)				
		*********************				
	1-533-233-11	HOLDER, FUSE				
*	4-886-555-00	HEAT SINK				
	7-682-548-04	SCREW +BVTT 3X8 (S)				
		< CAPACITOR >				
C901	1-136-165-00	FILM	0.1uF	5%	50V	

Ref. No.	Part No.	Description				Remark
C902	1-136-165-00	FILM	0.1uF	5%	50V	
C903	1-126-974-11	ELECT	3300uF	20%	50V	
C904	1-126-974-11	ELECT	3300uF	20%	50V	
C905	1-124-929-11	ELECT	22uF	20%	100V	
C906	1-124-929-11	ELECT	22uF	20%	100V	
C907	1-124-907-11	ELECT	10uF	20%	50V	
C911	1-124-564-11	ELECT	4700uF	20%	25V	
C912	1-124-564-11	ELECT	4700uF	20%	25V	
C913	1-136-165-00	FILM	0.1uF	5%	50V	
C914	1-136-165-00	FILM	0.1uF	5%	50V	
C915	1-124-927-11	ELECT	4.7uF	20%	100V	
C916	1-124-925-11	ELECT	2.2uF	20%	100V	
C917	1-126-927-11	ELECT	2200uF	20%	10V	
C918	1-126-927-11	ELECT	2200uF	20%	10V	
C919	1-124-604-00	ELECT	330uF	20%	10V	
C921	1-101-005-00	CERAMIC	22000PF		50V	
C922	1-124-604-00	ELECT	330uF	20%	10V	
C923	1-123-382-00	ELECT	3.3uF	20%	100V	
C941	1-124-477-11	ELECT	47uF	20%	25V	
C942	1-124-477-11	ELECT	47uF	20%	25V	
C943	1-124-477-11	ELECT	47uF	20%	25V	
C951	1-124-927-11	ELECT	4.7uF	20%	100V	
C952	1-162-294-31	CERAMIC	0.001uF	10%	50V	
C953	1-124-477-11	ELECT	47uF	20%	25V	
C954	1-162-282-31	CERAMIC	100PF	10%	50V	
C956	1-124-910-11	ELECT	47uF	20%	50V	
C957	1-124-910-11	ELECT	47uF	20%	50V	
C958	1-124-910-11	ELECT	47uF	20%	50V	
C959	1-124-910-11	ELECT	47uF	20%	50V	
C960	1-136-165-00	FILM	0.1uF	5%	50V	
C961	1-136-165-00	FILM	0.1uF	5%	50V	
C962	1-124-903-11	ELECT	1uF	20%	50V	
C971	1-124-927-11	ELECT	4.7uF	20%	100V	
C972	1-162-294-31	CERAMIC	0.001uF	10%	50V	
C973	1-124-477-11	ELECT	47uF	20%	25V	
C974	1-162-282-31	CERAMIC	100PF	10%	50V	
C976	1-124-910-11	ELECT	47uF	20%	50V	
C979	1-124-910-11	ELECT	47uF	20%	50V	
C980	1-136-165-00	FILM	0.1uF	5%	50V	
C981	1-136-165-00	FILM	0.1uF	5%	50V	
C9000	1-164-159-11	CERAMIC	0.1uF		50V	
		< CONNECTOR >				
* CN901	1-564-321-00	PIN, CONNECTOR 2P				
CN911	1-695-336-31	PIN, CONNECTOR (PC BOARD) 13P				
CN912	1-695-094-11	SOCKET, CONNECTOR 11P				
CN913	1-750-179-11	SOCKET, CONNECTOR 5P				
		< DIODE >				
D901	8-719-312-09	DIODE RBA-402				

Ref. No.	Part No.	Description	Remark
D903	8-719-200-82	DIODE 11ES2	
D904	8-719-200-82	DIODE 11ES2	
D905	8-719-934-22	DIODE HZS30-2L	
D906	8-719-014-66	DIODE UZP-5.6B	
D911	8-719-200-82	DIODE 11ES2	
D912	8-719-200-82	DIODE 11ES2	
D913	8-719-200-82	DIODE 11ES2	
D914	8-719-200-82	DIODE 11ES2	
D915	8-719-987-63	DIODE 1N4148M	
D920	8-719-200-82	DIODE 11ES2	
D921	8-719-815-85	DIODE 1S1585	
D922	8-719-987-63	DIODE 1N4148M	
D923	8-719-987-63	DIODE 1N4148M	
D924	8-719-987-63	DIODE 1N4148M	
D941	8-719-001-70	DIODE UZL-12M1	
D942	8-719-815-85	DIODE 1S1585	
D943	8-719-933-33	DIODE HZS6A1L	

< FUSE >

Ref. No.	Part No.	Description	Remark
⚠F901	1-532-078-00	FUSE T1A (C50:E, EA, AUS, SP, PX)	
⚠F901	1-532-215-00	FUSE T800mA (C50:AEP, UK, IT, G, EE)	
⚠F901	1-576-103-11	FUSE 1.6A (C50:CND/C50U)	
⚠F902	1-532-279-00	FUSE T500mA (C50:E, EA, SP, PX)	
⚠F911	1-532-203-00	FUSE T2A (C50:AEP, UK, IT, G, EE, E, EA, AUS, SP, PX)	
⚠F911	1-576-104-11	FUSE 2A (C50:CND/C50U)	
⚠F912	1-532-203-00	FUSE T2A (C50:AEP, UK, IT, G, EE, E, EA, AUS, SP, PX)	
⚠F912	1-576-104-11	FUSE 2A (C50:CND/C50U)	

< IC >

Ref. No.	Part No.	Description	Remark
IC911	8-759-602-66	IC M5230L-A	
IC921	8-759-604-35	IC M5F78M05L	
IC951	8-749-900-96	IC STK-4142MK2 (C50:AEP, UK, IT, G, EE)	
IC951	8-749-920-13	IC STK-4132MK2 (C50:CND, E, EA, AUS, SP, PX/C50U)	

< COIL >

Ref. No.	Part No.	Description	Remark
⚠L901	1-424-485-11	FILTER, LINE (C50:AEP, UK, IT, G, EE)	

< TRANSISTOR >

Ref. No.	Part No.	Description	Remark
Q901	8-729-141-83	TRANSISTOR 2SA473	
Q913	8-729-620-05	TRANSISTOR 2SC2603-EF	
Q922	8-729-900-36	TRANSISTOR DTC124ES	
Q923	8-729-900-63	TRANSISTOR DTA124ES	
Q924	8-729-900-36	TRANSISTOR DTC124ES	
Q925	8-729-900-63	TRANSISTOR DTA124ES	
Q926	8-729-900-36	TRANSISTOR DTC124ES	
Q941	8-729-209-15	TRANSISTOR 2SD2012	
Q942	8-729-900-36	TRANSISTOR DTC124ES	

< TRANSFORMER >

Ref. No.	Part No.	Description	Remark
⚠T901	1-423-710-11	TRANSFORMER, POWER (C50U)	
⚠T901	1-423-711-11	TRANSFORMER, POWER (C50:AEP, IT, G, EE)	
⚠T901	1-423-712-11	TRANSFORMER, POWER (C50:UK)	
⚠T901	1-423-713-11	TRANSFORMER, POWER (C50:E, EA, AUS, PX)	
⚠T901	1-423-752-11	TRANSFORMER, POWER (C50:SP)	
⚠T901	1-423-753-11	TRANSFORMER, POWER (C50:CND)	

< RESISTOR >

Ref. No.	Part No.	Description	Remark
⚠R901	1-202-725-00	SOLID 3.3M 10% 1/2W	(C50:CND/C50U)
R903	1-212-897-00	FUSIBLE 470 5% 1/4W	F
R904	1-249-426-11	CARBON 5.6K 5% 1/4W	
R910	1-247-903-00	CARBON 1M 5% 1/4W	
R911	1-249-409-11	CARBON 220 5% 1/4W	F
R912	1-249-409-11	CARBON 220 5% 1/4W	F
R913	1-249-433-11	CARBON 22K 5% 1/4W	
R914	1-249-414-11	CARBON 560 5% 1/4W	F
R915	1-249-414-11	CARBON 560 5% 1/4W	F
R916	1-249-431-11	CARBON 15K 5% 1/4W	
R917	1-249-431-11	CARBON 15K 5% 1/4W	
R918	1-249-429-11	CARBON 10K 5% 1/4W	
R919	1-249-423-11	CARBON 3.3K 5% 1/4W	F
R920	1-249-429-11	CARBON 10K 5% 1/4W	
R923	1-249-419-11	CARBON 1.5K 5% 1/4W	F
R924	1-249-429-11	CARBON 10K 5% 1/4W	
R925	1-249-429-11	CARBON 10K 5% 1/4W	
R926	1-249-429-11	CARBON 10K 5% 1/4W	
⚠R941	1-212-986-91	FUSIBLE 150 5% 1/2W	F
R942	1-249-425-11	CARBON 4.7K 5% 1/4W	F
R943	1-249-425-11	CARBON 4.7K 5% 1/4W	F
R951	1-249-417-11	CARBON 1K 5% 1/4W	F
R952	1-249-438-11	CARBON 56K 5% 1/4W	
R953	1-249-418-11	CARBON 1.2K 5% 1/4W	F
R954	1-249-438-11	CARBON 56K 5% 1/4W	
R955	1-249-421-11	CARBON 2.2K 5% 1/4W	F
R956	1-249-421-11	CARBON 2.2K 5% 1/4W	F
⚠R957	1-212-881-11	FUSIBLE 100 5% 1/4W	F
⚠R958	1-212-881-11	FUSIBLE 100 5% 1/4W	F
R959	1-260-099-11	CARBON 1K 5% 1/2W	
R960	1-260-099-11	CARBON 1K 5% 1/2W	
⚠R961	1-212-849-00	FUSIBLE 4.7 5% 1/4W	F
R962	1-260-076-11	CARBON 10 5% 1/2W	
⚠R965	1-212-881-11	FUSIBLE 100 5% 1/4W	F
R971	1-249-417-11	CARBON 1K 5% 1/4W	F
R972	1-249-438-11	CARBON 56K 5% 1/4W	
R973	1-249-418-11	CARBON 1.2K 5% 1/4W	F
R974	1-249-438-11	CARBON 56K 5% 1/4W	
R975	1-249-421-11	CARBON 2.2K 5% 1/4W	F
R976	1-249-421-11	CARBON 2.2K 5% 1/4W	F

The components identified by mark ⚠ or dotted line with mark ⚠ are critical for safety. Replace only with part number specified.	Les composants identifiés par une marque ⚠ sont critiques pour la sécurité. Ne les remplacer que par une piéce portant le numéro spécifié.

Ref. No.	Part No.	Description	Remark
R978	1-247-883-00	CARBON 150K 5% 1/4W	
R980	1-249-429-11	CARBON 10K 5% 1/4W	
R982	1-260-076-11	CARBON 10 5% 1/2W	
R985	1-249-417-11	CARBON 1K 5% 1/4W	F
R9000	1-249-429-11	CARBON 10K 5% 1/4W	
		< SWITCH >	
⚠S901	1-572-675-11	SWITCH, POWER VOLTAGE CHANGE (VOLTAGE SELECTOR) (C50:E, EA, SP, PX)	
**			
*	1-648-413-11	SP.TM BOARD ***********	
		< CAPACITOR >	
C963	1-164-098-11	CERAMIC 0.047uF 12V (C50:IT, G)	
C983	1-164-098-11	CERAMIC 0.047uF 12V (C50:IT, G)	
		< RESISTOR >	
R963	1-260-076-11	CARBON 10 5% 1/2W (C50:IT, G)	
R983	1-260-076-11	CARBON 10 5% 1/2W (C50:IT, G)	
		< TERMINAL >	
* TB951	1-537-240-21	TERMINAL BOARD (CHECKER PIN) (SPEAKER)	
**			
*	1-648-414-11	SW BOARD (C50:AEP, UK, IT, G, EE) ****************************	
		< CONNECTOR >	
* CN711	1-564-518-11	PLUG, CONNECTOR 3P	
		< RESISTOR >	
R707	1-249-425-11	CARBON 4.7K 5% 1/4W	F
		< SWITCH >	
S701	1-554-650-00	SWITCH, SLIDE (INPUT SELECTOR)	
**			
*	1-634-841-14	SW-A BOARD (RA12A) (C50) **********************	
		< CONNECTOR >	
* CNP81	1-568-852-11	SOCKET, CONNECTOR 9P	

Ref. No.	Part No.	Description	Remark
		< IC >	
IC81A	8-749-924-10	IC PHONT REFLECTOR NJL5165K-B(H1)	
		< RESISTOR >	
R84	1-249-417-11	CARBON 1K 5% 1/4W	F
R85	1-249-408-11	CARBON 180 5% 1/4W	F
		< SWITCH >	
S81A	1-571-958-11	SWITCH, PUSH (1 KEY) (STOP DET)	
S82A	1-571-281-21	SWITCH, LEAF (Cr02 DET)	
S86A	1-571-281-21	SWITCH, LEAF (HALF DET)	
**			
*	1-634-841-14	SW-B BOARD (RB22A) (C50) **********************	
		< CONNECTOR >	
* CNP81	1-568-852-11	SOCKET, CONNECTOR 9P	
		< IC >	
IC81B	8-749-924-10	IC PHONT REFLECTOR NJL5165K-B(H1)	
		< RESISTOR >	
R81	1-249-414-11	CARBON 560 5% 1/4W	F
R82	1-247-818-11	CARBON 300 5% 1/4W	
R83	1-247-834-11	CARBON 1.3K 5% 1/4W	
R84	1-249-417-11	CARBON 1K 5% 1/4W	F
R85	1-249-408-11	CARBON 180 5% 1/4W	F
		< SWITCH >	
S81B	1-571-958-11	SWITCH, PUSH (1 KEY) (STO DET)	
S82B	1-571-281-21	SWITCH, LEAF (Cr02 DET)	
S83	1-571-281-21	SWITCH, LEAF (METAL DET)	
S84	1-571-281-21	SWITCH, LEAF (ERASE PROOF, SIDE A)	
S85	1-571-281-21	SWITCH, LEAF (ERASE PROOF, SIDE B)	
S86B	1-571-281-21	SWITCH, LEAF (HALF DET)	
**			
*	A-4360-972-A	TC MAIN BOARD, COMPLETE (C50) ****************************	
		< CAPACITOR >	
C201	1-130-479-00	MYLAR 0.0047uF 5% 50V	
C202	1-162-291-31	CERAMIC 560PF 10% 50V	
C203	1-136-165-00	FILM 0.1uF 5% 50V	
C204	1-124-907-11	ELECT 10uF 20% 50V	
C205	1-124-903-11	ELECT 1uF 20% 50V	
C206	1-124-902-00	ELECT 0.47uF 20% 50V	

The components identified by mark ⚠ or dotted line with mark ⚠ are critical for safety. Replace only with part number specified.	Les composants identifiés par une marque ⚠ sont critiques pour la sécurité. Ne les remplacer que par une piéce portant le numéro spécifié.

Ref. No.	Part No.	Description			Remark
C207	1-124-907-11	ELECT	10uF	20%	50V
C208	1-161-377-00	CERAMIC	0.0047uF	20%	16V
C209	1-161-375-00	CERAMIC	0.0022uF	20%	50V
C210	1-124-902-00	ELECT	0.47uF	20%	50V
C211	1-124-903-11	ELECT	1uF	20%	50V
C212	1-124-907-11	ELECT	10uF	20%	50V
C240	1-124-907-11	ELECT	10uF	20%	50V
C241	1-124-907-11	ELECT	10uF	20%	50V
C242	1-124-122-11	ELECT	100uF	20%	50V
C243	1-124-122-11	ELECT	100uF	20%	50V
C244	1-124-443-00	ELECT	100uF	20%	10V
C245	1-124-471-00	ELECT	1000uF	20%	6.3V
C246	1-126-101-11	ELECT	100uF	20%	16V
C247	1-126-101-11	ELECT	100uF	20%	16V
C248	1-126-101-11	ELECT	100uF	20%	16V
C260	1-126-157-11	ELECT	10uF	20%	16V
C261	1-124-907-11	ELECT	10uF	20%	50V
C270	1-162-306-11	CERAMIC	0.01uF	20%	16V
C271	1-162-290-31	CERAMIC	470PF	10%	50V
C272	1-162-290-31	CERAMIC	470PF	10%	50V
C273	1-164-159-11	CERAMIC	0.1uF		50V
C274	1-164-159-11	CERAMIC	0.1uF		50V
C275	1-162-306-11	CERAMIC	0.01uF	20%	16V
C291	1-164-159-11	CERAMIC	0.1uF		50V
C292	1-126-096-11	ELECT	10uF	20%	35V
C293	1-162-282-31	CERAMIC	100PF	10%	50V
C294	1-162-282-31	CERAMIC	100PF	10%	50V
C295	1-124-925-11	ELECT	2.2uF	20%	100V
C301	1-130-479-00	MYLAR	0.0047uF	5%	50V
C302	1-162-291-31	CERAMIC	560PF	10%	50V
C303	1-136-165-00	FILM	0.1uF	5%	50V
C304	1-126-096-11	ELECT	10uF	20%	35V
C305	1-124-903-11	ELECT	1uF	20%	50V
C306	1-124-465-00	ELECT	0.47uF	20%	50V
C307	1-126-096-11	ELECT	10uF	20%	35V
C308	1-124-907-11	ELECT	10uF	20%	50V
C309	1-164-159-11	CERAMIC	0.1uF		50V
C311	1-124-903-11	ELECT	1uF	20%	50V
C312	1-124-907-11	ELECT	10uF	20%	50V
		< CONNECTOR >			
CN200	1-750-418-11	CONNECTOR, FFC/FPC 13P			
CN202	1-580-783-11	CONNECTOR, BOARD TO BOARD 10P			
CN203	1-580-783-11	CONNECTOR, BOARD TO BOARD 10P			
CN204	1-580-783-11	CONNECTOR, BOARD TO BOARD 10P			
CN205	1-750-414-11	CONNECTOR, FFC/FPC 9P			
CN206	1-750-414-11	CONNECTOR, FFC/FPC 9P			
CN207	1-750-420-11	CONNECTOR, FFC/FPC 15P			
* CN208	1-564-522-11	PLUG, CONNECTOR 7P			
* CN354	1-564-518-11	PLUG, CONNECTOR 3P			

Ref. No.	Part No.	Description				Remark
		< DIODE >				
D201	8-719-987-63	DIODE	1N4148M			
D202	8-719-987-63	DIODE	1N4148M			
D203	8-719-987-63	DIODE	1N4148M			
D204	8-719-200-82	DIODE	11ES2			
D205	8-719-200-82	DIODE	11ES2			
D206	8-719-200-82	DIODE	11ES2			
D207	8-719-987-63	DIODE	1N4148M			
D208	8-719-987-63	DIODE	1N4148M			
		< IC >				
IC201	8-759-098-75	IC	HA12171NT			
IC202	8-759-099-08	IC	M50964-260FP			
IC203	8-759-520-90	IC	PST572E			
IC204	8-759-207-05	IC	TA7272P			
		< COIL >				
L201	1-408-080-00	INDUCTOR	100uH			
L202	1-408-080-00	INDUCTOR	100uH			
		< TRANSISTOR >				
Q201	8-729-119-78	TRANSISTOR	2SC2785-HFE			
Q210	8-729-900-65	TRANSISTOR	DTA144ES			
Q211	8-729-900-65	TRANSISTOR	DTA144ES			
Q212	8-729-900-65	TRANSISTOR	DTA144ES			
Q213	8-729-900-65	TRANSISTOR	DTA144ES			
Q214	8-729-900-65	TRANSISTOR	DTA144ES			
Q215	8-729-900-65	TRANSISTOR	DTA144ES			
Q216	8-729-900-89	TRANSISTOR	DTC144ES			
Q217	8-729-900-89	TRANSISTOR	DTC144ES			
Q218	8-729-900-65	TRANSISTOR	DTA144ES			
Q219	8-729-119-78	TRANSISTOR	2SC2785-HFE			
Q220	8-729-119-78	TRANSISTOR	2SC2785-HFE			
Q221	8-729-801-84	TRANSISTOR	2SB1013-4			
Q222	8-729-801-84	TRANSISTOR	2SB1013-4			
Q223	8-729-900-65	TRANSISTOR	DTA144ES			
Q224	8-729-900-89	TRANSISTOR	DTC144ES			
Q301	8-729-119-78	TRANSISTOR	2SC2785-HFE			
		< RESISTOR >				
R201	1-249-430-11	CARBON	12K	5%	1/4W	
R202	1-249-431-11	CARBON	15K	5%	1/4W	
R203	1-249-425-11	CARBON	4.7K	5%	1/4W	F
R204	1-249-428-11	CARBON	8.2K	5%	1/4W	F
R205	1-249-441-11	CARBON	100K	5%	1/4W	
R206	1-249-434-11	CARBON	27K	5%	1/4W	
R208	1-249-429-11	CARBON	10K	5%	1/4W	
R209	1-249-432-11	CARBON	18K	5%	1/4W	
R210	1-247-885-00	CARBON	180K	5%	1/4W	
R212	1-249-425-11	CARBON	4.7K	5%	1/4W	F

TC MAIN TC MAIN (U)

Ref. No.	Part No.	Description				Remark
R213	1-249-432-11	CARBON	18K	5%	1/4W	
R214	1-247-840-00	CARBON	2.4K	5%	1/4W	
R215	1-249-433-11	CARBON	22K	5%	1/4W	
R216	1-249-417-11	CARBON	1K	5%	1/4W	F
R231	1-249-429-11	CARBON	10K	5%	1/4W	
R232	1-249-425-11	CARBON	4.7K	5%	1/4W	F
R233	1-249-434-11	CARBON	27K	5%	1/4W	
R234	1-249-429-11	CARBON	10K	5%	1/4W	
R235	1-249-425-11	CARBON	4.7K	5%	1/4W	F
R236	1-249-434-11	CARBON	27K	5%	1/4W	
R241	1-249-429-11	CARBON	10K	5%	1/4W	
R242	1-247-903-00	CARBON	1M	5%	1/4W	
R243	1-247-895-00	CARBON	470K	5%	1/4W	
R244	1-247-895-00	CARBON	470K	5%	1/4W	
R245	1-249-410-11	CARBON	270	5%	1/4W	F
R246	1-249-410-11	CARBON	270	5%	1/4W	F
R248	1-249-410-11	CARBON	270	5%	1/4W	F
R249	1-249-410-11	CARBON	270	5%	1/4W	F
R251	1-249-410-11	CARBON	270	5%	1/4W	F
R252	1-249-411-11	CARBON	330	5%	1/4W	
R253	1-249-429-11	CARBON	10K	5%	1/4W	
R254	1-249-429-11	CARBON	10K	5%	1/4W	
R255	1-249-421-11	CARBON	2.2K	5%	1/4W	F
R256	1-249-421-11	CARBON	2.2K	5%	1/4W	F
R257	1-249-437-11	CARBON	47K	5%	1/4W	
R258	1-249-429-11	CARBON	10K	5%	1/4W	
R259	1-249-425-11	CARBON	4.7K	5%	1/4W	F
R260	1-249-425-11	CARBON	4.7K	5%	1/4W	F
R261	1-249-429-11	CARBON	10K	5%	1/4W	
R262	1-249-429-11	CARBON	10K	5%	1/4W	
R263	1-249-411-11	CARBON	330	5%	1/4W	
R265	1-249-411-11	CARBON	330	5%	1/4W	
R266	1-249-429-11	CARBON	10K	5%	1/4W	
R267	1-249-415-11	CARBON	680	5%	1/4W	F
R268	1-249-429-11	CARBON	10K	5%	1/4W	
R269	1-249-415-11	CARBON	680	5%	1/4W	F
R270	1-249-429-11	CARBON	10K	5%	1/4W	
R271	1-249-425-11	CARBON	4.7K	5%	1/4W	F
R272	1-249-435-11	CARBON	33K	5%	1/4W	
R273	1-249-437-11	CARBON	47K	5%	1/4W	
R274	1-247-872-11	CARBON	51K	5%	1/4W	
R275	1-247-862-11	CARBON	20K	5%	1/4W	
R276	1-247-866-11	CARBON	30K	5%	1/4W	
R277	1-247-872-11	CARBON	51K	5%	1/4W	
R278	1-249-405-11	CARBON	100	5%	1/4W	F
R279	1-249-381-11	CARBON	1	5%	1/4W	F
R280	1-249-381-11	CARBON	1	5%	1/4W	F
R281	1-249-425-11	CARBON	4.7K	5%	1/4W	F
R282	1-249-435-11	CARBON	33K	5%	1/4W	
R283	1-249-437-11	CARBON	47K	5%	1/4W	
R284	1-247-872-11	CARBON	51K	5%	1/4W	
R285	1-247-862-11	CARBON	20K	5%	1/4W	
R286	1-247-866-11	CARBON	30K	5%	1/4W	
R287	1-247-872-11	CARBON	51K	5%	1/4W	
R288	1-249-405-11	CARBON	100	5%	1/4W	F
R289	1-249-381-11	CARBON	1	5%	1/4W	F
R290	1-249-381-11	CARBON	1	5%	1/4W	F
⚠R291	1-249-456-11	CARBON	5.6	5%	1/4W	
R292	1-249-441-11	CARBON	100K	5%	1/4W	
R293	1-249-405-11	CARBON	100	5%	1/4W	F
R294	1-249-405-11	CARBON	100	5%	1/4W	F
R295	1-249-417-11	CARBON	1K	5%	1/4W	F
R300	1-215-451-00	METAL	18K	1%	1/6W	
R301	1-249-430-11	CARBON	12K	5%	1/4W	
R302	1-249-431-11	CARBON	15K	5%	1/4W	
R303	1-249-425-11	CARBON	4.7K	5%	1/4W	F
R304	1-249-428-11	CARBON	8.2K	5%	1/4W	F
R305	1-249-429-11	CARBON	10K	5%	1/4W	
R306	1-249-429-11	CARBON	10K	5%	1/4W	
R307	1-249-429-11	CARBON	10K	5%	1/4W	
R308	1-249-425-11	CARBON	4.7K	5%	1/4W	F
R309	1-249-429-11	CARBON	10K	5%	1/4W	
R310	1-249-429-11	CARBON	10K	5%	1/4W	
R311	1-247-864-11	CARBON	24K	5%	1/4W	
R312	1-249-425-11	CARBON	4.7K	5%	1/4W	F
R313	1-249-432-11	CARBON	18K	5%	1/4W	
R314	1-247-840-00	CARBON	2.4K	5%	1/4W	
R315	1-249-433-11	CARBON	22K	5%	1/4W	
R316	1-249-417-11	CARBON	1K	5%	1/4W	F
R320	1-249-429-11	CARBON	10K	5%	1/4W	
R321	1-249-429-11	CARBON	10K	5%	1/4W	
R322	1-249-429-11	CARBON	10K	5%	1/4W	

< VARIABLE RESISTOR >

RV201	1-241-136-11	RES, ADJ, CARBON 10K
RV301	1-241-136-11	RES, ADJ, CARBON 10K

< VIBRATOR >

X201	1-577-358-21	VIBRATOR, CERAMIC (4MHz)

****

* A-4360-949-A TC MAIN (U) BOARD, COMPLETE (C50U)

****

< CAPACITOR >

C201	1-162-290-31	CERAMIC	470PF	10%	50V
C203	1-136-157-00	FILM	0.022uF	5%	50V
C204	1-124-282-00	ELECT	22uF	20%	25V
C205	1-124-443-00	ELECT	100uF	20%	10V
C211	1-162-290-31	CERAMIC	470PF	10%	50V

The components identified by mark ⚠ or dotted line with mark ⚠ are critical for safety. Replace only with part number specified.	Les composants identifiés par une marque ⚠ sont critiques pour la sécurité. Ne les remplacer que par une piéce portant le numéro spécifié.

Ref. No.	Part No.	Description			Remark
C213	1-136-157-00	FILM	0.022uF	5%	50V
C214	1-124-282-00	ELECT	22uF	20%	25V
C215	1-124-443-00	ELECT	100uF	20%	10V
C216	1-124-443-00	ELECT	100uF	20%	10V
C221	1-136-433-11	FILM	100PF	5%	630V
C222	1-162-284-31	CERAMIC	150PF	10%	50V
C223	1-136-439-11	FILM	330PF	5%	630V
C231	1-130-479-00	MYLAR	0.0047uF	5%	50V
C232	1-161-375-00	CERAMIC	2200PF	20%	50V
C233	1-124-903-11	ELECT	1uF	20%	50V
C234	1-124-907-11	ELECT	10uF	20%	50V
C235	1-164-159-11	CERAMIC	0.1uF		50V
C236	1-124-907-11	ELECT	10uF	20%	50V
C237	1-124-903-11	ELECT	1uF	20%	50V
C238	1-124-902-00	ELECT	0.47uF	20%	50V
C239	1-124-907-11	ELECT	10uF	20%	50V
C251	1-162-290-31	CERAMIC	470PF	10%	50V
C253	1-136-157-00	FILM	0.022uF	5%	50V
C254	1-124-282-00	ELECT	22uF	20%	25V
C255	1-124-443-00	ELECT	100uF	20%	10V
C261	1-162-290-31	CERAMIC	470PF	10%	50V
C263	1-136-157-00	FILM	0.022uF	5%	50V
C264	1-124-282-00	ELECT	22uF	20%	25V
C265	1-124-443-00	ELECT	100uF	20%	10V
C266	1-124-443-00	ELECT	100uF	20%	10V
C271	1-136-433-11	FILM	100PF	5%	630V
C272	1-162-284-31	CERAMIC	150PF	10%	50V
C273	1-136-439-11	FILM	330PF	5%	630V
C281	1-130-479-00	MYLAR	0.0047uF	5%	50V
C282	1-161-375-00	CERAMIC	2200PF	20%	50V
C283	1-124-903-11	ELECT	1uF	20%	50V
C284	1-124-907-11	ELECT	10uF	20%	50V
C285	1-164-159-11	CERAMIC	0.1uF		50V
C286	1-124-907-11	ELECT	10uF	20%	50V
C287	1-124-903-11	ELECT	1uF	20%	50V
C288	1-124-902-00	ELECT	0.47uF	20%	50V
C289	1-124-907-11	ELECT	10uF	20%	50V
C301	1-124-925-11	ELECT	2.2uF	20%	100V
C302	1-136-601-11	FILM	0.01uF	5%	630V
C303	1-130-848-00	FILM	0.0082uF	5%	100V
C304	1-136-593-11	FILM	0.0033uF	5%	100V
C305	1-136-593-11	FILM	0.0033uF	5%	100V
C306	1-124-902-00	ELECT	0.47uF	20%	50V
C307	1-124-927-11	ELECT	4.7uF	20%	100V
C308	1-136-562-11	FILM	0.0082uF	5%	630V
C310	1-124-478-11	ELECT	100uF	20%	25V
C311	1-124-478-11	ELECT	100uF	20%	25V
C312	1-124-443-00	ELECT	100uF	20%	10V
C313	1-164-159-11	CERAMIC	0.1uF		50V
C314	1-164-159-11	CERAMIC	0.1uF		50V

Ref. No.	Part No.	Description			Remark
C351	1-136-175-00	FILM	0.68uF	5%	50V
C352	1-164-159-11	CERAMIC	0.1uF		50V
C353	1-124-443-00	ELECT	100uF	20%	10V
C363	1-124-907-11	ELECT	10uF	20%	50V
C364	1-162-596-11	CERAMIC	0.022uF	10%	50V
C391	1-124-443-00	ELECT	100uF	20%	10V
C392	1-124-443-00	ELECT	100uF	20%	10V
C393	1-124-443-00	ELECT	100uF	20%	10V
C394	1-124-443-00	ELECT	100uF	20%	10V
C801	1-124-443-00	ELECT	100uF	20%	10V
C802	1-161-494-00	CERAMIC	0.022uF		25V
C803	1-124-443-00	ELECT	100uF	20%	10V
C900	1-124-907-11	ELECT	10uF	20%	50V

< CONNECTOR >

	CN301	1-564-506-11	PLUG, CONNECTOR 3P
*	CN311	1-564-509-11	PLUG, CONNECTOR 6P
	CN321	1-564-505-11	PLUG, CONNECTOR 2P
*	CN351	1-564-509-11	PLUG, CONNECTOR 6P
	CN352	1-750-418-11	CONNECTOR, FFC/FPC 13P
	CN353	1-750-418-11	CONNECTOR, FFC/FPC 13P
*	CN354	1-564-506-11	PLUG, CONNECTOR 3P
	CN361	1-750-452-11	CONNECTOR, FFC/FPC 11P

< DIODE >

D351	8-719-933-54	DIODE	HZS9A2L
D362	8-719-987-63	DIODE	1N4148M
D801	8-719-200-82	DIODE	11ES2
D802	8-719-000-54	DIODE	UZL-6L3

< HEAD >

HE901	1-543-673-11	HEAD, MAGNETIC (ERASE)
HP901	1-543-940-11	HEAD, MAGNETIC (PLAYBACK)
HRP901	1-543-319-11	HEAD, MAGNETIC (REC/PLAYBACK)

< IC >

IC301	8-759-111-44	IC	uPC4570C-1
IC302	8-759-111-44	IC	uPC4570C-1
IC303	8-759-079-42	IC	uPC1330HA-NA
IC304	8-759-098-73	IC	HA12172NT
IC309	8-759-520-90	IC	PST572E
IC351	8-759-822-09	IC	LB1641
IC361	8-759-175-90	IC	M37471M4-220SP

< COIL >

L201	1-410-781-11	INDUCTOR	33mH
L271	1-410-781-11	INDUCTOR	33mH
L301	1-410-521-11	INDUCTOR	100uH

TC MAIN (U)

Ref. No.	Part No.	Description	Remark
		< MOTOR >	
M901	X-3362-377-1	MOTOR (WH) ASSY (CAPSTAN)	
		< TRANSISTOR >	
Q241	8-729-620-05	TRANSISTOR 2SC2603-EF	
Q291	8-729-620-05	TRANSISTOR 2SC2603-EF	
Q301	8-729-194-57	TRANSISTOR 2SC945-P	
Q302	8-729-194-57	TRANSISTOR 2SC945-P	
Q303	8-729-194-57	TRANSISTOR 2SC945-P	
Q351	8-729-900-65	TRANSISTOR DTA144ES	
Q352	8-729-900-89	TRANSISTOR DTC144ES	
Q353	8-729-801-93	TRANSISTOR 2SD1387-3	
Q354	8-729-900-61	TRANSISTOR DTA114ES	
Q355	8-729-119-76	TRANSISTOR 2SA1175-HFE	
Q356	8-729-620-05	TRANSISTOR 2SC2603-EF	
Q361	8-729-900-80	TRANSISTOR DTC114ES	
Q365	8-729-900-80	TRANSISTOR DTC114ES	
Q391	8-729-900-61	TRANSISTOR DTA114ES	
Q801	8-729-801-93	TRANSISTOR 2SD1387-3	
Q901	8-729-900-61	TRANSISTOR DTA114ES	
Q902	8-729-900-61	TRANSISTOR DTA114ES	
Q903	8-729-900-61	TRANSISTOR DTA114ES	
		< RESISTOR >	
R201	1-247-899-11	CARBON 680K 5% 1/4W	
R202	1-249-405-11	CARBON 100 5% 1/4W	F
R203	1-247-882-11	CARBON 130K 5% 1/4W	
R204	1-249-426-11	CARBON 5.6K 5% 1/4W	
R205	1-249-409-11	CARBON 220 5% 1/4W	F
R211	1-247-889-00	CARBON 270K 5% 1/4W	
R212	1-249-433-11	CARBON 22K 5% 1/4W	
R213	1-247-882-11	CARBON 130K 5% 1/4W	
R214	1-249-426-11	CARBON 5.6K 5% 1/4W	
R215	1-249-409-11	CARBON 220 5% 1/4W	F
R216	1-249-405-11	CARBON 100 5% 1/4W	F
R221	1-249-430-11	CARBON 12K 5% 1/4W	
R231	1-249-430-11	CARBON 12K 5% 1/4W	
R232	1-249-431-11	CARBON 15K 5% 1/4W	
R233	1-249-429-11	CARBON 10K 5% 1/4W	
R241	1-249-425-11	CARBON 4.7K 5% 1/4W	F
R242	1-249-429-11	CARBON 10K 5% 1/4W	
R243	1-249-425-11	CARBON 4.7K 5% 1/4W	F
R245	1-249-433-11	CARBON 22K 5% 1/4W	
R246	1-247-840-00	CARBON 2.4K 5% 1/4W	
R251	1-247-899-11	CARBON 680K 5% 1/4W	
R252	1-249-405-11	CARBON 100 5% 1/4W	F
R253	1-247-882-11	CARBON 130K 5% 1/4W	
R254	1-249-426-11	CARBON 5.6K 5% 1/4W	
R255	1-249-409-11	CARBON 220 5% 1/4W	F
R261	1-247-889-00	CARBON 270K 5% 1/4W	
R262	1-249-433-11	CARBON 22K 5% 1/4W	
R263	1-247-882-11	CARBON 130K 5% 1/4W	
R264	1-249-426-11	CARBON 5.6K 5% 1/4W	
R265	1-249-409-11	CARBON 220 5% 1/4W	F
R266	1-249-405-11	CARBON 100 5% 1/4W	F
R271	1-249-430-11	CARBON 12K 5% 1/4W	
R281	1-249-430-11	CARBON 12K 5% 1/4W	
R282	1-249-431-11	CARBON 15K 5% 1/4W	
R283	1-249-429-11	CARBON 10K 5% 1/4W	
R291	1-249-425-11	CARBON 4.7K 5% 1/4W	F
R292	1-249-429-11	CARBON 10K 5% 1/4W	
R293	1-249-425-11	CARBON 4.7K 5% 1/4W	F
R295	1-249-433-11	CARBON 22K 5% 1/4W	
R296	1-247-840-00	CARBON 2.4K 5% 1/4W	
R301	1-249-429-11	CARBON 10K 5% 1/4W	
⚠R302	1-212-849-00	FUSIBLE 4.7 5% 1/4W	F
⚠R303	1-212-849-00	FUSIBLE 4.7 5% 1/4W	F
R304	1-249-436-11	CARBON 39K 5% 1/4W	
R305	1-249-436-11	CARBON 39K 5% 1/4W	
R310	1-247-876-11	CARBON 75K 5% 1/4W	
R311	1-249-432-11	CARBON 18K 5% 1/4W	
R312	1-249-432-11	CARBON 18K 5% 1/4W	
R313	1-249-429-11	CARBON 10K 5% 1/4W	
R314	1-249-429-11	CARBON 10K 5% 1/4W	
R315	1-249-429-11	CARBON 10K 5% 1/4W	
R316	1-249-429-11	CARBON 10K 5% 1/4W	
R317	1-249-429-11	CARBON 10K 5% 1/4W	
R318	1-249-429-11	CARBON 10K 5% 1/4W	
R319	1-249-417-11	CARBON 1K 5% 1/4W	F
R319	1-249-429-11	CARBON 10K 5% 1/4W	
R321	1-247-864-11	CARBON 24K 5% 1/4W	
R351	1-249-417-11	CARBON 1K 5% 1/4W	F
R353	1-249-414-11	CARBON 560 5% 1/4W	F
R354	1-249-425-11	CARBON 4.7K 5% 1/4W	F
R355	1-249-407-11	CARBON 150 5% 1/4W	F
R356	1-249-423-11	CARBON 3.3K 5% 1/4W	F
R358	1-249-425-11	CARBON 4.7K 5% 1/4W	F
R361	1-249-429-11	CARBON 10K 5% 1/4W	
R362	1-249-429-11	CARBON 10K 5% 1/4W	
R363	1-249-429-11	CARBON 10K 5% 1/4W	
R364	1-249-429-11	CARBON 10K 5% 1/4W	
R365	1-249-417-11	CARBON 1K 5% 1/4W	F
R366	1-249-437-11	CARBON 47K 5% 1/4W	
R367	1-249-417-11	CARBON 1K 5% 1/4W	F
R368	1-249-437-11	CARBON 47K 5% 1/4W	
R369	1-247-903-00	CARBON 1M 5% 1/4W	
R370	1-249-429-11	CARBON 10K 5% 1/4W	
R371	1-249-405-11	CARBON 100 5% 1/4W	F
R372	1-249-441-11	CARBON 100K 5% 1/4W	

The components identified by mark ⚠ or dotted line with mark ⚠ are critical for safety. Replace only with part number specified.	Les composants identifiés par une marque ⚠ sont critiques pour la sécurité. Ne les remplacer que par une piéce portant le numéro spécifié.

Ref.No.	Part No.	Description				Remark
R376	1-249-429-11	CARBON	10K	5%	1/4W	
R377	1-249-429-11	CARBON	10K	5%	1/4W	
R378	1-249-417-11	CARBON	1K	5%	1/4W	F
R379	1-249-425-11	CARBON	4.7K	5%	1/4W	F
R380	1-249-417-11	CARBON	1K	5%	1/4W	F
R381	1-249-425-11	CARBON	4.7K	5%	1/4W	F
R382	1-249-417-11	CARBON	1K	5%	1/4W	F
R383	1-249-429-11	CARBON	10K	5%	1/4W	
R384	1-249-417-11	CARBON	1K	5%	1/4W	F
R385	1-249-429-11	CARBON	10K	5%	1/4W	
R386	1-249-417-11	CARBON	1K	5%	1/4W	F
R387	1-249-429-11	CARBON	10K	5%	1/4W	
R388	1-249-429-11	CARBON	10K	5%	1/4W	
⚠R391	1-219-136-11	FUSIBLE	0.22	10%	1/4W	
⚠R392	1-219-136-11	FUSIBLE	0.22	10%	1/4W	
R399	1-249-393-11	CARBON	10	5%	1/4W	F
R801	1-249-429-11	CARBON	10K	5%	1/4W	
R802	1-249-425-11	CARBON	4.7K	5%	1/4W	F
R803	1-249-425-11	CARBON	4.7K	5%	1/4W	F
R804	1-249-413-11	CARBON	470	5%	1/4W	F

< VARIABLE RESISTOR >

Ref.No.	Part No.	Description
RV201	1-241-119-11	RES, ADJ, CARBON 1K
RV211	1-241-119-11	RES, ADJ, CARBON 1K
RV221	1-238-550-11	RES, ADJ, CARBON 100K
RV231	1-241-136-11	RES, ADJ, CARBON 10K
RV251	1-241-119-11	RES, ADJ, CARBON 1K
RV261	1-241-119-11	RES, ADJ, CARBON 1K
RV271	1-238-550-11	RES, ADJ, CARBON 100K
RV281	1-241-136-11	RES, ADJ, CARBON 10K
RV351	1-241-136-11	RES, ADJ, CARBON 10K
RV352	1-241-121-11	RES, ADJ, CARBON 4.7K

< TRANSFORMER >

Ref.No.	Part No.	Description
T301	1-433-400-11	TRANSFORMER, BIAS OSCILLATION

< VIBRATOR >

Ref.No.	Part No.	Description
X361	1-577-358-21	VIBRATOR, CERAMIC (4MHz)

****

* A-4360-973-A TC SW BOARD, COMPLETE (C50)

****

< CONNECTOR >

Ref.No.	Part No.	Description
CN307	1-691-648-11	SOCKET, CONNECTOR 15P

< DIODE >

Ref.No.	Part No.	Description	
D302	8-719-018-46	LED	SEL3510C-CD (▷)
D303	8-719-018-46	LED	SEL3510C-CD (◁)
D304	8-719-312-37	LED	SEL4225C-C (● REC)
D305	8-719-310-04	LED	SEL4925A-D (❚❚ PAUSE)
D307	8-719-018-46	LED	SEL3510C-CD (▷)
D308	8-719-018-46	LED	SEL3510C-CD (◁)
D309	8-719-312-37	LED	SEL4225C-C (CD SYNCHRO)
D311	8-719-312-37	LED	SEL4225C-C (HIGH SPEED DUBBING)

< RESISTOR >

Ref.No.	Part No.	Description				Remark
R341	1-249-407-11	CARBON	150	5%	1/4W	F
R342	1-249-409-11	CARBON	220	5%	1/4W	F
R343	1-249-415-11	CARBON	680	5%	1/4W	F
R344	1-249-417-11	CARBON	1K	5%	1/4W	F
R345	1-249-426-11	CARBON	5.6K	5%	1/4W	
R346	1-249-430-11	CARBON	12K	5%	1/4W	
R347	1-249-407-11	CARBON	150	5%	1/4W	F
R348	1-249-409-11	CARBON	220	5%	1/4W	F
R349	1-249-411-11	CARBON	330	5%	1/4W	
R350	1-249-413-11	CARBON	470	5%	1/4W	F
R351	1-249-411-11	CARBON	330	5%	1/4W	
R352	1-249-413-11	CARBON	470	5%	1/4W	F
R353	1-249-415-11	CARBON	680	5%	1/4W	F
R354	1-249-417-11	CARBON	1K	5%	1/4W	F
R355	1-249-420-11	CARBON	1.8K	5%	1/4W	F
R356	1-249-424-11	CARBON	3.9K	5%	1/4W	F

< SWITCH >

Ref.No.	Part No.	Description
S301	1-554-303-21	SWITCH, TACTILE (■)
S302	1-554-303-21	SWITCH, TACTILE (▷)
S303	1-554-303-21	SWITCH, TACTILE (◁)
S304	1-554-303-21	SWITCH, TACTILE (◀◀ AMS)
S305	1-554-303-21	SWITCH, TACTILE (▶▶ AMS)
S306	1-692-356-11	SWITCH, SLIDE (DOLBY NR)
S307	1-692-503-11	SWITCH, SLIDE (DIRECTION)
S308	1-554-303-21	SWITCH, TACTILE (■)
S309	1-554-303-21	SWITCH, TACTILE (❚❚ PAUSE)
S310	1-554-303-21	SWITCH, TACTILE (▷)
S311	1-554-303-21	SWITCH, TACTILE (◁)
S313	1-554-303-21	SWITCH, TACTILE (◀◀ AMS)
S314	1-554-303-21	SWITCH, TACTILE (▶▶ AMS)
S315	1-554-303-21	SWITCH, TACTILE (● REC)
S316	1-554-303-21	SWITCH, TACTILE (HIGH SPEED DUBBING)
S318	1-554-303-21	SWITCH, TACTILE (CD SYNCHRO)

****

* A-4360-950-A TC SW (U) BOARD, COMPLETE (C50U)

****

< CONNECTOR >

Ref.No.	Part No.	Description
CN362	1-691-646-11	SOCKET, CONNECTOR 11P

The components identified by mark ⚠ or dotted line with mark ⚠ are critical for safety. Replace only with part number specified.	Les composants identifiés par une marque ⚠ sont critiques pour la sécurité. Ne les remplacer que par une piéce portant le numéro spécifié.

TC SW (U) | TRANSISTOR | VR

Ref. No.	Part No.	Description	Remark
		< DIODE >	
D901	8-719-018-46	LED SEL3510C-CD (▷)	
D902	8-719-018-46	LED SEL3510C-CD (◁)	
D903	8-719-310-04	LED SEL4925A-D (❚❚ PAUSE)	
D904	8-719-312-37	LED SEL4225C-C (● REC)	
D905	8-719-312-37	LED SEL4225C-C (HIGH SPEED DUBBING)	
		< RESISTOR >	
R901	1-249-407-11	CARBON 150 5% 1/4W	F
R902	1-249-407-11	CARBON 150 5% 1/4W	F
R903	1-249-409-11	CARBON 220 5% 1/4W	F
R904	1-249-413-11	CARBON 470 5% 1/4W	F
R905	1-249-413-11	CARBON 470 5% 1/4W	F
R906	1-249-419-11	CARBON 1.5K 5% 1/4W	F
R907	1-249-421-11	CARBON 2.2K 5% 1/4W	F
R908	1-249-424-11	CARBON 3.9K 5% 1/4W	F
R909	1-249-426-11	CARBON 5.6K 5% 1/4W	
R910	1-249-430-11	CARBON 12K 5% 1/4W	
R911	1-249-419-11	CARBON 1.5K 5% 1/4W	F
R912	1-249-421-11	CARBON 2.2K 5% 1/4W	F
R913	1-247-854-11	CARBON 9.1K 5% 1/4W	
R914	1-249-430-11	CARBON 12K 5% 1/4W	
		< SWITCH >	
S901	1-692-356-11	SWITCH, SLIDE (DOLBY NR)	
S902	1-554-303-21	SWITCH, TACTILE (■)	
S903	1-554-303-21	SWITCH, TACTILE (▷)	
S904	1-554-303-21	SWITCH, TACTILE (◀◀ AMS)	
S905	1-554-303-21	SWITCH, TACTILE (▶▶ AMS)	
S906	1-554-303-21	SWITCH, TACTILE (● REC)	
S907	1-554-303-21	SWITCH, TACTILE (HIGH SPEED DUBBING)	
S908	1-554-303-21	SWITCH, TACTILE (■)	
S909	1-554-303-21	SWITCH, TACTILE (❚❚ PAUSE)	
S910	1-554-303-21	SWITCH, TACTILE (▷)	
S911	1-554-303-21	SWITCH, TACTILE (◀◀ AMS)	
S912	1-554-303-21	SWITCH, TACTILE (▶▶ AMS)	

****

Ref. No.	Part No.	Description	Remark
*	1-648-807-11	TRANSISTOR BOARD ****************	
		< TRANSISTOR >	
Q911	8-729-141-83	TRANSISTOR 2SA473	
Q912	8-729-209-15	TRANSISTOR 2SD2012	

****

Ref. No.	Part No.	Description	Remark
*	1-648-412-11	VR BOARD ********	
		< CAPACITOR >	
C861	1-124-477-11	ELECT 47uF 20% 25V	
		< CONNECTOR >	
CN803	1-695-092-11	SOCKET, CONNECTOR 7P	
CN804	1-564-506-11	PLUG, CONNECTOR 3P	
		< IC >	
IC861	8-759-820-62	IC LB1639	
		< RESISTOR >	
R861	1-249-425-11	CARBON 4.7K 5% 1/4W	F
R862	1-249-425-11	CARBON 4.7K 5% 1/4W	F
R863	1-249-393-11	CARBON 10 5% 1/4W	F
		< VARIABLE RESISTOR >	
RV861	1-223-487-11	RES, VAR, CARBON 100K/100K (VOLUME)	

****

Ref. No.	Part No.	Description	Remark
		MISCELLANEOUS *************	
14	1-534-517-00	WIRE (FLAT TYPE)(13 CORE)(C50U)	
14	1-690-590-31	WIRE, FLAT TYPE (13 CORE)(C50)	
⚠18	1-574-902-11	CORD, POWER (C50:E, PX)	
⚠18	1-590-083-11	CORD, POWER (C50:AUS)	
⚠18	1-696-169-11	CORD, POWER (AEP)(C50:AEP, IT, G, EE, EA, SP)	
⚠18	1-696-570-21	CORD, POWER (C50:UK)	
⚠18	1-751-586-11	CORD, POWER (C50:CND/C50U)	
20	1-696-804-21	WIRE (FLAT TYPE)(19 CORE)	
⚠21	1-569-008-11	ADAPTER, CONVERSION 2P (C50:EA, SP)	
⚠22	1-569-007-11	ADAPTER, CONVERSION 2P (C50:E, PX)	
62	1-575-784-11	WIRE (FLAT TYPE)(11 CORE)(C50U)	
62	1-690-065-11	WIRE, FLAT TYPE (15 CORE)(C50)	
63	1-690-319-11	WIRE, FLAT TYPE (11 CORE)	
64	1-575-906-11	WIRE, FLAT TYPE (15 CORE)	
69	1-696-725-11	WIRE (FLAT TYPE)(9 CORE)(C50)	
71	1-590-209-11	WIRE (FLAT TYPE)(7 CORE)	
167	1-638-983-11	MOTOR FLEXIBLE BOARD (C50)	
378	1-452-676-11	MAGNET	
⚠505	8-848-144-11	DEVICE, OPTICAL KSS-240A	
506	1-575-001-11	WIRE, FLAT TYPE (12 CORE)	
508	1-751-597-11	WIRE (FLAT TYPE)(22 CORE)	
⚠F901	1-532-215-00	FUSE (T800mA)(C50:AEP, UK, IT, G, EE)	
⚠F901	1-532-078-00	FUSE (T1A)(C50:E, EA, AUS, SP, PX)	
⚠F901	1-576-103-11	FUSE (1.6A)(C50:CND/C50U)	
⚠F902	1-532-279-00	FUSE (T500mA)(C50:E, EA, SP, PX)	

The components identified by mark ⚠ or dotted line with mark ⚠ are critical for safety. Replace only with part number specified.	Les composants identifiés par une marque ⚠ sont critiques pour la sécurité. Ne les remplacer que par une piéce portant le numéro spécifié.

Ref. No.	Part No.	Description	Remark
⚠F911	1-532-203-00	FUSE (T2A)(C50:EXCEPT CND)	
⚠F911	1-576-104-11	FUSE (2A)(C50:CND/C50U)	
⚠F912	1-532-203-00	FUSE (T2A)(C50:EXCEPT CND)	
⚠F912	1-576-104-11	FUSE (2A)(C50:CND/C50U)	
HE901	1-543-673-11	HEAD, MAGNETIC (ERASE)(C50U)	
HP101	A-2003-837-F	DECK ASSY, HEAD (DECK A)(C50)	
HP901	1-543-940-11	HEAD, MAGNETIC (PLAYBACK)(C50U)	
HRP901	1-543-319-11	HEAD, MAGNETIC (REC/PB)(C50U)	
HRPE101	A-2003-838-F	DECK ASSY, HEAD (DECK B)(C50)	
M101	X-4917-523-3	MOTOR ASSY, DISK (SPINDLE)	
M101A	X-3363-501-1	MOTOR, REEL ASSY (DECK A)(C50)	
M101B	X-3363-501-1	MOTOR, REEL ASSY (DECK B)(C50)	
M102	X-4917-504-1	MOTOR ASSY (SLED)	
M102A	X-3365-377-1	MOTOR, CAPSTAN ASSY (DECK A)(C50)	
M102B	X-3365-377-1	MOTOR, CAPSTAN ASSY (DECK B)(C50)	
M103	A-4660-232-A	MOTOR (CDM) ASSY (LOADING)	
M104	A-4660-232-A	MOTOR (CDM) ASSY (UP/DOWN)	
M105	A-4660-232-A	MOTOR (CDM) ASSY (CLAMP)	
M901	X-3362-377-1	MOTOR (WH) ASSY (CAPSTAN)(C50U)	
M902	A-2004-188-A	MOTOR ASSY, DC (TRIGGER)(C50U)	
S101	1-572-085-11	SWITCH LEAF (LIMIT)	
S102	1-466-819-11	ENCODER, ROTARY	
⚠T901	1-423-710-11	TRANSFORMER, POWER (C50U)	
⚠T901	1-423-711-11	TRANSFORMER, POWER (C50:AEP,IT,G,EE)	
⚠T901	1-423-712-11	TRANSFORMER, POWER (C50:UK)	
⚠T901	1-423-713-11	TRANSFORMER, POWER (C50:E,EA,AUS,PX)	
⚠T901	1-423-752-11	TRANSFORMER, POWER (C50:SP)	
⚠T901	1-423-753-11	TRANSFORMER, POWER (C50:CND)	

****

ACCESSORIES & PACKING MATERIALS

****

Ref. No.	Part No.	Description	Remark
	1-467-179-11	COMMANDER, STANDARD (RM-S535) (C50:AEP,UK,IT,G,EE)	
	1-501-374-11	ANTENNA, LOOP (C50:AEP,UK,IT,G,EE)	
	1-501-594-11	ANTENNA (FM)(C50:AEP,UK,IT,G,EE)	
	3-372-531-01	SCREW (C), TRANSPORT	
*	3-703-079-21	LABEL (BACK), SUB CAUTION (C50:UK)	
	3-703-710-41	STICKER, SONY SYMBOL (12)	
*	3-704-350-01	SHEET (STANDARD), PROTECTION	
	3-757-339-11	MANUAL, INSTRUCTION (ENGLISH) (C50:AEP,UK,EE)	
	3-757-339-41	MANUAL, INSTRUCTION (FRENCH,SPANISH, PORTUGUESE,DUTCH,SWEDISH)(C50:AEP)	
	3-757-339-51	MANUAL, INSTRUCTION (GERMAN,ITALIAN) (C50:AEP,IT,G)	
	3-757-339-61	MANUAL, INSTRUCTION (RUSSIAN,POLISH) (C50:EE)	
	3-757-339-71	MANUAL, INSTRUCTION (DANISH,FINNISH) (C50:EE)	
	3-757-461-11	INSTRUCTION (CAUTION)	
	4-941-762-11	COVER (MLY), BATTERY (COMMANDER) (C50:AEP,UK,IT,G,EE)	
*	4-961-658-01	CUSHION (L)	
*	4-961-659-01	CUSHION (R)	
*	4-961-663-01	INDIVIDUAL CARTON (C50:AEP,UK,IT,G,EE)	

****

****

HARDWARE LIST

****

Ref. No.	Part No.	Description	Remark
#1	7-621-255-15	SCREW +P 2X3	
#2	7-682-548-09	SCREW +BVTT 3X8 (S)	
#3	7-685-647-79	SCREW +BVTP 3X10 TYPE2 N-S	
#4	7-685-650-79	SCREW +BVTP 3X16 TYPE2 IT-3	
#5	7-685-870-01	SCREW +BVTT 3X5 (S)	
#6	7-621-775-00	SCREW +B 2.6X3	
#7	7-627-556-08	SCREW +P 2.6X2.8 (C50)	
#8	7-621-255-25	SCREW +BVTT 2X4 (S)(C50U)	
#9	7-623-921-01	RING, RETAINING, CAPSTAN (C50U)	
#10	7-621-770-67	SCREW +BVTT 2.6X6 (S)(C50U)	
#11	7-621-775-10	SCREW +B 2.6X4 (C50U)	
#12	7-621-770-XX	SCREW +PTT 2.6X8 (S)	
#13	7-621-772-48	SCREW +B 2X8 (C50U)	
#14	7-682-547-09	SCREW +BVTT 3X6 (S)	
#15	7-682-546-09	SCREW +PTT 3X5 (S)	
#16	7-685-645-79	SCREW +BTP 3X6 TYPE2 N-S	
#17	7-621-773-95	SCREW +BVTT 2.6X6 (S)	
#18	7-685-131-19	SCREW +BTP 2.6X4 TYPE2 N-S	
#19	7-685-134-19	SCREW +BTP 2.6X8 TYPE2 N-S	
#20	7-621-773-93	SCREW (PANEL 2.6 TP2)	
#21	7-682-548-04	SCREW +BVTT 3X8 (S)	
#22	7-685-533-19	SCREW +BTP 2.6X6 TYPE2 N-S	
#23	7-621-255-35	SCREW +BVTT 2X5 (S)	

The components identified by mark ⚠ or dotted line with mark ⚠ are critical for safety. Replace only with part number specified.	Les composants identifiés par une marque ⚠ sont critiques pour la sécurité. Ne les remplacer que par une piéce portant le numéro spécifié.

9-959-086-11

(Including 9-959-086-91)

Sony Corporation
Audio Group

English
93G09101-1
Printed in Japan
© 1993.7
Published by Audio Sector Quality Assurance Dept.